

CUL - H04106-17-0248380

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Book List

17

A MONTHLY LIST OF RECOMMENDED
SCIENTIFIC AND TECHNICAL BOOKS

with annotations

VOLUME 29 NUMBER 1

January 1964

Entries 1-61



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LIB BOOK LIST

VOL. 29

NO. 1

JANUARY 1964

Preface

Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standards Specifications (except bound volumes).

The place of publication is London unless otherwise stated.

Aslib is deeply appreciative of the services of those subject specialists and special librarians who examine and assess the books to be listed. Without their help it would be impossible to ensure that entries are up to date and that only books of high standard are included.

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Aslib Book List

VOLUME 29 . NUMBER 1 . JANUARY 1964

SOCIAL SCIENCES

Statistics

- BRCDIE, M. B. 1
On thinking statistically: notes for managers. Hutchinson, 1963. xv,66p, tables, refs. 12s 6d.
A Author of this attractive short book is a staff member at the Administrative College, Henley. The increasing use of the statistical approach in modern life makes the appeal of this book much wider than the 'managers' for whom it was written.
- VID, H. A. 2
Method of paired comparisons. Griffin, 1963. 124p, tables, refs. 28s. *Griffin's statistical monographs and courses, no. 12.*
C The scientific method of comparing things, conditions, or treatments in pairs is well known and particularly useful for mathematicians, statisticians, economists, and psychologists. This unified treatment is authoritative on questions of design, analysis, and application.

MATHEMATICS AND NATURAL SCIENCES

Mathematics

- ROWN, R. G. 3
Smoothing, forecasting and prediction of discrete time series. Englewood Cliffs (NJ), Prentice-Hall, 1963. [12],468p, tables, diags, bibliog. 80s. *Prentice-Hall International series in management.*
C New book on short-term forecasting and prediction, covers a wide range of techniques and computing methods. Its timely importance for industry and government may give it as great an impact as was achieved by the author's first book in 1959.
- LORES, I. 4
Logic of computer arithmetic. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xii,493p, tables, diags. 90s. *Prentice-Hall International series in electrical engineering.*
C Concerned solely with logical operations and exhaustive in its scope. Intended for computer engineers or logical designers, the primary concern is with parallel natural binary arithmetic. Most of the book is devoted to the operations of addition, multiplication, and division, in both fixed and floating point forms. There are also chapters on compound arithmetic and modulus arithmetic.
- JO, B. C. 5
Analysis and synthesis of sampled-data control systems. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xiv,528p, tables, diags, refs. 96s. *Prentice-Hall International series in electrical engineering.*
C Exhaustive and authoritative treatment of sampled-data control systems using both Z-transform and state transition methods. Chapters of particular interest are on synthesis by digital controllers, statistical analysis, and non-linear systems.
- OW, I. 6
Capsule calculus. Macmillan, 1963. xiii,177p, tables, diags. 12s 6d.
B First-rate, easy-to-understand introduction to the differential and integral calculus, differential equations, complex variables, and the operational calculus. Combines pure mathematics with practical applications. For students and refresher use.
- OMNEY, G. C. and MUDGE, I. W. 7
Mathematics for mechanical engineering technicians. Vol. 1. EUP, 1963. 218p, tables, diags. 8s 6d. *Technical college series.*
C Concise introduction to mathematics for students studying for the mechanical engineering technicians course. It gives the student a practical approach to mathematics in a manner far from boring. The text is well written and easy to understand. There are ample exercises for the student to practise.

TIMAN, A. F.

Theory of approximation of functions of a real variable. Tr. by J. Berry. Oxford, NY, [etc], Pergamon P, 1963. xii, 631p, bibliog. 100s. *International series monographs in pure and applied mathematics*.

C This authoritative book covering both classical theory and recent Russian work is a thematic exposition of the relationship between the structural properties of real functions and the possible approximations to them by polynomials and other simple functions.

52 Astronomy. Surveying. Geodesy

YEARBOOK OF ASTRONOMY 1964. Ed. by J. G. Porter, associate editor P. Moore. Eyre & Spottiswoode, 1963, viii, 215p, tables, diags, bibliog. 25s cloth; 10s paper.

B Latest edition of this annual specially designed for the amateur astronomer gives much useful information in descriptive or diagrammatic form and there are several special articles mainly on the sun, moon, and planets.

MILLMAN, P. M.

This universe of space. R & KP, 1963. 117p, tables, diags. 14s.

A Clearly written, up-to-date account of modern astronomy, ranging from the near planets to the galaxies and theories of the universe, by a member of the staff of the National Research Council, Ottawa.

53 Physics

CHORLTON, F.

Textbook of dynamics. Princeton (NJ), London, Van Nostrand, ©1963. 26. tables, diags. 45s cloth; 25s paper.

B Valuable basic text on classical dynamics for undergraduates of mathematics, science, engineering; analysis based on vectorial methods, and covering the dynamics of particles and rigid bodies in one, two, and three dimensions.

GIBSON, A. F. and BURGESS, R. E. eds

Progress in semiconductors. Vol. 7. Heywood, 1963. vi, 238p, plates, tables, diags, refs. 65s.

C Well referenced specialist review articles covering in detail, (a) thermal, electrical, and mechanical properties of bismuth and bismuth telluride; (b) interaction between impurities and dislocations in, and the effect of pressure on, silicon and germanium.

LOW, W. ed.

Paramagnetic resonance: proceedings of the First International Conference held in Jerusalem, July 16-20, 1962. 2 vols. NY, London, Academic P, 1963. xxxv, 921p, tables, diags, refs. \$30.

C These two volumes for the expert contain 102 scientific papers, some reviews and others containing original research, by internationally recognized authors. The magnetic resonances of transition and rare earth metal ions and of impurities in ionic lattices and semiconductors form the central theme, with their electronic structures and their relaxation processes, especially at low temperatures, being the aspects particularly covered. Theory and experiment are equally prominent.

STATISTICAL PHYSICS 3. 1962 Brandeis lectures in theoretical physics, vol. 3. N. Benjamin, 1963. vii, 252p, diags, refs.

C This collection of five sets of lectures, given in 1962, is particularly valuable in the field of statistical methods in modern physics and mechanics. The lecturers, headed by P. Uhlenbeck, are a sufficient guarantee of authority.

537 Electricity

BENSON, F. A. and HARRISON, D.

Electric-circuit theory. 2nd ed. Arnold, 1963. viii, 402p, diags. 35s.

B Covers AC and DC circuits and includes a chapter on transistors. Drawn from the authors' experience in teaching, the book is a considerable help in the common difficulty of theory to practice.

ALLIDAY, E. C. and MORRIS, B. P. 16
Laboratory manual for principles of electricity and electronics. EUP, 1963.
xi, 100p, tables, diagrs. 9s 6d. *Technical college series.*

B Plain, practical book covering the preparation, performance, and presentation of results of a number of experiments in direct and alternating current, covering electromagnetism, static electricity, semi-conductors, and thermionic valves. A useful book on which teachers can base practical work to suit different courses.

39.1 Nuclear Physics

ONES, P. B. 17
Optical model in nuclear and particle physics. Interscience, 1963. vii, 118p, diagrs, refs. 35s.

C Intended as introduction to principles of the subject. Chapter 1 discusses theoretical approaches; chapter 2 contains a justification of the model; chapter 3 is devoted to the optical model and nuclear structure. Specialist text for nuclear physicists.

4 Chemistry

AWSON, B. E. 18
Practical inorganic chemistry. Methuen, 1963. viii, 356p, tables, diagrs. 25s.

B Thoughtful and stimulating attempt to modernize and render attractive the practical side of inorganic, physical-inorganic, and analytical chemistry at GCE advanced level, with possible use in one-year courses in Universities and Colleges of Technology.

JNT, J. P. 19
Metal ions in aqueous solution. NY, Amsterdam, Benjamin, 1963. xi, 124p, tables, diagrs, refs. \$6.05.

B3-C Review of physical-inorganic aspects of water and aqueous solutions, covering thermodynamics of ion hydration, structure of water and aqueous solutions, hydrolysis, complex equilibria, rates and mechanisms, and electron transfer reactions. A skilful introduction to the exciting developments in this newish field with particular emphasis on the last ten years.

ORE, W. J. 20
Physical chemistry. 4th ed. Longmans, 1963. xiii, 844p, illus, tables, diagrs, refs. 50s.

B Completely new English edition of this well-known textbook. Rearrangement of material and extensive rewriting have wrought considerable improvement, making this a most attractive text for undergraduate courses in physical chemistry.

ARR, N. L. ed. 21
Laboratory handbook. Newnes, 1963. xi, [1483]p, illus, tables, diagrs, refs, bibliog. 10 gns.

D Contributions by forty-seven specialists describing experimental techniques applicable in many fields of science and technology. Readable contributions with specialist references.

AMACHANDRAN, G. N. ed. 22
Crystallography and crystal perfection: proceedings of a symposium held in Madras 14-18 January 1963. . . NY, London, Academic P, 1963. x, 374p, tables, diagrs, refs. 75s.

C Authoritative reports from many laboratories of current development in theory, analysis, and instrumentation relating to the X-ray phase problem, statistical methods of sign determination, the use of anomalous dispersion, X-ray and neutron studies of imperfections and disorder, and brief reports on electron diffraction studies, elasticity, Raman spectra of glycine, and lattice vibrations in ionic crystals.

IMIDT, H. and von STACKELBERG, M. 23
Modern polarographic methods. Tr. by R. E. W. Maddison. NY, London, Academic P, 1963. v, 99p, diagrs, refs. 44s.

T Translation of *Angewandte Chemie Monograph 77*, a valuable survey of the current situation by eminent exponents of the method, covering both DC and AC polarography, and developments in strobe, square wave, pulse, and R-F methods.

55 Geology. Meteorology**551.46 Oceanography**

24

OCEAN WAVE SPECTRA: proceedings of a conference sponsored by the U.S. Naval Oceanographic Office, and the National Academy of Sciences. Englewood Cliffs (NJ), Prentice-Hall, 1963. viii, 357p, illus, tables, diagrs. 100s.

C Contains some thirty papers, with discussions, given at the Conference in 1961 by many of the leading authorities on the subject. Various wave measurement methods and analysis techniques are discussed, including measurements from a submerged hovering submarine.

57 Anthropological and Biological Sciences

HASEK, M. *and others*, eds

2

Mechanisms of immunological tolerance: proceedings of a symposium held at Liblice near Prague, November 8-10, 1961. Ed. by M. Hasek, A. Lengerova and M. Vojtiskova. NY, London, Academic P, [1963]. 544p, plates, tables, diagrs, refs. 128s 6d.

C Fifty-seven papers grouped under six main headings, namely immunological tolerance in the classical sense; immunological tolerance and tumour problems; tolerant states induced in adult organisms or cells; immunological tolerance in radiation chimaeras; immunological enhancement and the nature of isoantigens; tolerance and autoimmunity. Prof. P. B. Medawar of London gave the introductory address. The eminent authors of the papers come from many parts of the world. The whole is a most valuable source of information in this very rapidly growing field.

577.1 Biochemistry

PINCUS, G. *ed.*

2

Recent progress in hormone research: proceedings of the 1962 Laurentian Hormone Conference. Vol. XIX, NY, London, Academic P, 1963. xiii, 750p, illus, tables, diagrs, refs. \$22.

C Fourteen authoritative and fully documented survey articles of interest to research workers in biochemistry and endocrinology deal with physical methods in hormone research; steroid hormones, hormones and cellular metabolism, thyroid hormone, and with comparative endocrinology.

58 Botany

LEWIN, R. A. *ed.*

2

Physiology and biochemistry of algae. NY, London, Academic P, 1962. xxvii, 929p, plates, tables, diagrs, refs. 228s 6d.

B Well-edited and comprehensive collection of fifty-five authoritative summaries of modern knowledge of various aspects of the nutrition, metabolism, chemical composition, physiology, and physiological ecology of simple algae, phytoplankton, and seaweeds. The only book in this field.

59 Zoology

COMMON, I. F. B.

Australian moths. Brisbane, Jacaranda Press, 1963. 128p, illus. 13s 6d (Aust.)

B A valuable work on this unique fauna, covering a field on which there is little available literature.

WALLACE, H. R.

Biology of plant parasitic nematodes. Arnold, 1963. viii, 280p, plates, tables, diagrs, refs. 50s.

C Presents a balanced account of all aspects of the biology of plant parasitic nematodes, including methods for their control. Well illustrated and very readable, it will be of great value both to undergraduate students of parasitology and to research workers in plant nematology. An extensive bibliography follows each chapter.

WARING, H.

Color change mechanisms of cold-blooded vertebrates. NY, London, Academic P, 1963. xii, 266p, illus, tables, diagrs, refs. 76s.

C Up-to-date, comprehensive, and critical review of the subject with particular reference to physiological, biochemical, and evolutionary aspects. Successfully integrates the divergent results of the British and American schools of research into colour change. An important addition to the literature.

- ANNERMAN, D. A. 31
 Birds of the Atlantic Islands. Vol. 1, history of the birds of the Canary Islands and of the Salvages. Ill. by D. M. Reid-Henry. O & B, 1963. xxxi, 358p, illus, plates. 4 gns.
- C Elaborate and detailed account of the external morphology, habits, range, breeding biology, and movements of resident species, supplemented by brief notes on migrants. Based on personal observations made at periods separated by fifty years to which is added extensive quotations from published works. Emphasis is on the historical background. Illustrations are outstanding.
- LYMONT, J. E. G. 32
 Plankton and productivity in the oceans. Oxford, NY, [etc], Pergamon P, 1963. viii, 660p, illus, tables, diags, refs. 110s. *International series of monographs on pure and applied biology*.
- C Detailed accounts of the different forms, distribution, and factors influencing growth of plant and animal plankton, together with a general account of the physical and chemical properties of sea water, make this a useful textbook to the biologist specializing in oceanography.

APPLIED SCIENCES

Engineering and Technology

- ALEXANDER, J. M. and BREWER, R. C. 33
 Manufacturing properties of materials. Princeton (NJ), Van Nostrand, ©1963. xi, 489p, tables, diags, refs. 70s.
- B Discusses the physical properties and structure of metals and non-metals in relation to manufacturing processes. The text is based on the Institution of Mechanical Engineers' examination on 'Properties of materials for manufacture'.
- RARD, G. 34
 Book of water power. Frederick Warne, 1963. 96p, illus, plates, diags. 10s 6d; \$2.50.
- A Well-illustrated account of large, modern, hydro-electric power schemes told in simple language to enable boys to understand the underlying principles and guide them in choice of a career.

1 Mechanical and Electrical Engineering

- JUDGE, I. W. and ROMNEY, G. C. 35
 Engineering science for mechanical engineering technicians. Part 1. Vol. 1. EUP, 1963. ix, 112p, tables, diags. 7s 6d. *Technical college series*.
- B Practical approach to engineering science for students starting the mechanical engineering technicians course. Stresses the value of experiments and suggests a list of suitable ones at the end of the book. The student is introduced to the subjects covered by the work in easy stages. At the end of each chapter there are exercises for the student to work on, thus enabling him to become more familiar with the subject.
- CLEY, A. 36
 Mechanical engineering science for technicians course. Arnold, 1963. viii, 296p, diags, tables. 15s.
- B Covers the Engineering Science Syllabus for the two-year course of the City and Guilds of London Institute for Mechanical Engineering Technicians, Ordinary Grade and comparable courses. Discussion on practical applications of science in workshop is adequately illustrated by numerous worked examples and details of experiments concerned with chemistry, electricity and magnetism, and mechanics.
- AHL, A. M. 37
 Mechanical springs. 2nd ed. NY, London, McGraw-Hill, 1963. 323p, 99s.
- B-C Although described as the 2nd edition, this is really a completely rewritten text. The design data are complete in themselves, and references to other sources are comparatively few. A useful book for a design office.

1.3 Electrical Engineering

- LE, J. M. 38
 Pulse fundamentals. Ed. by I. L. Kosow. Englewood Cliffs (NJ), Prentice-Hall, 1963. xii, 499p, illus, diags, refs. 96s.
- A Self-contained, non-mathematical introduction to the theory of design of pulse circuits for radar, television, and communication engineers, technicians, and students.

GRACEY, G. C.

3

Overhead electric power lines. Ed. by A. J. Beaumont. Benn, 1963. xvi, 327p illus, diags, tables, refs. 70s.

B Offers a good introduction to the work and problems involved in the planning, construction, design, erection, operation, and maintenance of various types of overhead electric power lines in the United Kingdom and abroad. Well illustrated with photographs, diagrams, and charts.

MARTON, L. *ed.*

40

Advances in electronics and electron physics; vol. 18. NY, London, Academic P, 1963. x, 342p, illus, tables, diags, refs. 90s.

C Continuing a well-known series, this volume gives authoritative and up-to-date reviews of the Nightglow, recent development in computer organization, atomic collisions involving low-energy electrons and ions, semiconductor device evaluation, electron emissive microscopy, and should make a welcome addition to any technical library.

RODDAM, T.

41

Transistor inverters and converters. London, Iliffe for Wireless World Princeton (NJ), Van Nostrand, 1963. 7, 240p, tables, diags. 2 *gns.*

B Substantially the whole of the available information on the subject is gathered into one book. This material is analysed mathematically and presented in a form which will enable the engineer to use the arguments in the design of his own circuits.

621.4 *Internal combustion and other special engines*

MACKAY, D. B.

Design of space powerplants. Englewood Cliffs (NJ), Prentice-Hall, ©196 xviii, 332p, tables, diags. 90s.

C Concerned mainly with the design of heat engines for space applications. Proceeding from basic concepts to particular applications in the field of space technology, each chapter presents a coherent account of some aspect of space powerplant design. To the general reader the book may present an unfortunate lack of continuity and coherence between the various topics; however this should not detract from its undoubted usefulness.

621.7 *Workshop Practice*

HUMINIK, J. *ed.*

42

High temperature inorganic coatings. NY, Reinhold, ©1963. ix, 310p, illus, tables, diags. 80s.

C Deals with the chemistry and physics of coating materials; methods of application and testing; and with the influence of environmental conditions on service life at temperatures up to 7,000°F.

63 *Agriculture. Forestry. Livestock. Fisheries*

HAMMOND, J.

42

Animal breeding. Arnold, 1963. ix, 82p, illus, tables, diags. 8s. Paperback.

A-B Primarily intended for young farmers, the book describes briefly the principles of breeding and genetics of farm animals, and then outlines some of the methods whereby economic characters can be improved (e.g. fertility, milk, meat, and wool). Many illustrations and charts but no references of a bibliographical nature.

OVINGTON, J. D. *ed.*

42

Better use of the world's fauna for food. London, Institute of Biology, 1967. xi, 175p, illus, tables, diags, refs. 25s. *Symposia of the Institute of Biology, no. 1.*

A To meet the nutritional needs of an exploding world population; papers by a number of authorities are presented, covering means of increasing local available supplies of animal protein. Domestic and wild animal farming improvement, selective harvesting, and exploitation; greater utilization of fishery sources, marine and inland, by fish farming; an improved methods of increasing yields, harvesting, processing, and preserving existing food sources are considered.

65 *Business Techniques. Management*

BEVERIDGE, A.

Apprenticeship now: notes on the training of young entrants to industry. C & H, 1963, 168p, tables, refs. 25s.

- A Essentially a practical work by an experienced apprentice adviser which, though written prior to the White Paper on Industrial Training, will still be a valuable guide to the subject. Apart from guidance on such aspects as selection of apprentices, the cost of training and no training, to indenture or not, the most useful sections are those devoted to the syllabi of training schemes. Apart from management it will prove helpful for all interested in youth employment.

DEMYANYUK, F. S.

47

Technological principles of flow line and automated production. Tr. from the Russian by O. M. Blunn. English tr. ed. by E. Bishop. 2 vols. Oxford, NY, [etc], Pergamon P, 1963. xv,857p, illus, tables, diagsr. 140s.

- C Deals from a strictly technical, rather than managerial point of view, with the pre-requisites of flow-line production; the planning and optimizing of operation, with special emphasis on machining; and with the continuous changeover to new models.

KAUFMANN, A.

48

Methods and models of operations research. Tr. from the French. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xi,510p, tables, bibliog. 70s. *Prentice-Hall International series in management*.

- B-C Even when it was only available in French (published 1959), this book was recognized as being of outstanding value. The treatment at two distinct levels of difficulty makes it attractive to a wide variety of readers.

656 Transport

ROAD RESEARCH LABORATORY

49

Research on road safety. HMSO, 1963. 602p, illus. 2 gns.

- A Road safety research which the Road Research Laboratory has carried out since 1946 is described in detail and reference is made to other relevant investigations. This is a major survey of the field and is presented so that it will be of interest to the layman as well as the professional engineer.

66 Chemical Technology

APPS, E. A.

50

Ink technology for printers and students. Part 1, manufacture and testing of printing inks, rollers, and blankets; part 2, inks for the major printing processes; part 3, inks for the minor printing processes and specialized applications. Leonard Hill, 1963. xix,256p; xix,349p; xix,295p; plates, tables, diagsr, refs. 3 gns per vol.

- B The three parts of this monumental work together cover all aspects of printing ink technology as well as the testing of printing inks, rollers, and blankets. A most thorough, comprehensive, and up-to-date work, and Part 3 in particular fills a gap in literature on the subject. It has all the virtues of a really first-class textbook.

RAINBOW, C. and ROSE, A. H., *joint eds*

51

Biochemistry of industrial micro-organisms. NY. London, Academic P, 1963. xix,708p, tables, diagsr, refs. 7 gns.

- C Deals comprehensively with the biochemistry underlying most microbiological processes of current or potential importance. Recent innovations, e.g. the steroid transformations, are treated *in extenso* at the expense of older fermentations which are nevertheless adequately covered.

67/68 Manufactures

GROVES, W. R.

52

Plastics moulding plant. Vol. 1, hydraulics, compression, and transfer equipment. Iliffe, for the Plastics Institute, 1963. 7,120p, plates, diagsr. 37s 6d. *Engineering series*.

- C Necessary theoretical and practical knowledge of hydraulics and its practical application to plastics moulding presses of modern elaborate design is presented to the standard required for the professional examination of the Plastics Institute.

HUNTER, D. N.

53

Inorganic polymers. Oxford, Blackwell Scientific Pubs., 1963. 110p, tables, diagsr, refs. 25s.

- B An excellent, concise, authoritative introductory account dealing both with the theoretical side (on a fairly elementary level) and the practical side including the technology and applications of these polymers. Numerous selected references are provided, especially to the important Russian literature.

- KASWELL, E. R. 54
Wellington Sears handbook of industrial textiles. Wellington Sears, 1963. 757p, illus, bibliog. \$15; 120s.
D Preparations and manufacturing processes for natural and man-made industrial fibres are covered, with relevant physical and chemical test methods. Trade names are listed and there is a short bibliography.
- METHODS OF TEST FOR TEXTILES (excluding colour fastness tests). 3rd ed. British Standards Institution, 1963. viii, 559p, illus. 60s. *British Standard handbook, no. 11.* 55
B-D The second edition has been revised and enlarged. It excludes colour fastness tests (B.S. 1006, 2661-86, and 3661 : 1961) but collects together British Standard methods, Tentative Textile Standard and other methods, mainly from the textile research associations.
- SERRY, V. 56
British sawmilling practice. Benn, 1963. 248p, illus, tables, diagrs, refs. 45s.
A Provides information on types of mill, on the maintenance and operation of the machines, on material handling, and on mill organization. Also refers to new developments and criticizes some established practices.
- 681 Precision Mechanisms**
- GRAY, H. J. 57
Digital computer engineering. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xv, 381p, tables, diagrs, refs. 96s. *Prentice-Hall International series in electrical engineering.*
C Deals with the engineering rather than logical design aspects. Chapters of particular interest are concerned with reliability, circuit optimization, and interference between pulse transmission paths. An essentially practical book stressing the art of design.
- SMITH, D. L. A. 58
Principles of high-fidelity sound engineering. Pitman, 1963. xii, 158p, diagrs, refs. 25s.
B As a link between the general physics of sound reproduction and the more important specialized reference works this book covers all aspects from the nature of sound to voltage amplifiers and transducers.
- WARE, W. H. 59
Digital computer technology and design. Vol. 1, mathematical topics, principles of operation, and programming; vol. 2, circuits and machine design. NY, London, Wiley, ©1963. Tables, diagrs, refs. 60s; 90s.
B These books cover a surprisingly wide range of topics. The treatment is of necessity rather superficial and will appeal more to the general reader than to the specialist. They are written in a very readable style and form an excellent *introduction* to digital computer technology and design.
- 69 Building Industry**
- COWAN, H. J. and SMITH, P. R. 60
Design of reinforced concrete: in accordance with the SA Code for concrete in buildings. Sydney, London, [etc], Angus & Robertson, 1963. xx, 545p, illus, diagrs, tables, refs. 5 gns.
B This comprehensive textbook is ideal for the Australian student but should be treated warily by the English student as there are numerous differences between the Codes of each country. Its approach to some design problems, particularly torsion, are of interest to all engineers. Its counterpart based upon the English Code would be an invaluable reference book.
- 7 THE ARTS**
- 77 Photography**
- BOMBACK, E. S. 61
Photography in colour. Ill. by the author. Rev. ed. Fountain P. 1963. 112p, plates, tables. 17s 6d.
A Fundamentals comprehensively compiled and indexed for amateur's equipment using current Kodak film: incorporates camera, lens, and film selection, lighting control, colour balance and exposure; bulb and electronic flash; slide processing, projection, printing, handling, and storage.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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Aslib Book List



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SCIENTIFIC AND TECHNICAL BOOKS

with annotations

1964

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VOLUME 29 NUMBER 2

February 1964

Entries 62-119

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ASLIB BOOK LIST VOL. 29 NO. 2 FEBRUARY 1964

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- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
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Aslib Book List

VOLUME 29 . NUMBER 2 . FEBRUARY 1964

3 SOCIAL SCIENCES

31 Statistics

EKAMBARAM, S. K.

62

Statistical basis of acceptance sampling: an introduction for industrial executives. Asia Pub. House, ©1963. xii,124p, tables, diagrs. 1 gn.

A-B In a field where development is still active, this new book is welcome as a helpful guide for practical people and beginning students. The author is well placed to have written his book but note should be made that the effective date is about three years prior to publication.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

MACKEY, G. W.

63

Mathematical foundations of quantum mechanics: a lecture-note volume. NY, Amsterdam, Benjamin, 1963. x,137p, tables. \$7.70. *Mathematical physics monograph series*.

C A sophisticated text suitable for the graduate pure mathematician. The emphasis is mainly on abstract concepts and it is pleasing to find a third of the book confined to classical mechanics. A primary knowledge of abstract algebra, point set topology, and self-adjoint operators in Hilbert space is assumed.

PITT, H. R.

64

Integration, measure and probability. O & B, 1963. viii,110p. 25s. *University mathematical monographs*.

C First of a new series of texts for the mature student of mathematics. Set theory, measure, and integration are dealt with in sufficient detail to provide a base for the mathematical theory of probability, studied in the latter part of the book.

52 Astronomy. Surveying. Geodesy

WOLTJER, L. ed.

65

Distribution and motion of interstellar matter in galaxies: proceedings of a conference held at the Institute for Advanced Study, Princeton (NJ), 1961. NY, Amsterdam, Benjamin, 1962. xiii,330p, illus, tables, diagrs, refs. *Benjamin books in the planetary and earth sciences*.

C Original papers by acknowledged experts, which together constitute a detailed account of present day knowledge in this field. Main topics covered are studies of interstellar hydrogen, dynamics of interstellar matter, cosmic rays, galactic magnetic fields, and spiral structure.

53 Physics

DAVIDSON, J. F. and HARRISON, D.

66

Fluidised particles. CUP, 1963. xv,155p, plates, tables, diagrs, bibliog. 35s.

C Explains the behaviour of fluidized beds in terms of behaviour of the fluid bubbles within the particle bed. Useful to teachers and to process designers interested in understanding the physical basis of fluidization.

HAGEDORN, R.

67

Relativistic kinematics: a guide to the kinematic problems of high-energy physics. Amsterdam, NY, Benjamin, 1963. x,166p, diagrs. \$8.80. *Lecture notes and supplements in physics*.

B An unusually readable treatment of the standard techniques used in the kinematical aspects of elementary particle theory. It will be particularly useful to two types of readers: (i) those familiar with special relativity who require an account of its relevance in high-energy physics; (ii) those who wish to carry out relativistic calculations and who wish to be provided with the basic kinematical formulae in a convenient form. There are some useful worked problems.

HANNAH, J. and STEPHENS, R. C.

68

Mechanics of machines. Part 1, elementary theory and examples; part 2, advanced theory and examples. Arnold, 1963. viii, 232p; x, 449p, diags. 26s, 50s (board); 14s, 30s (paper).

B The two books cover the full three years of an engineering degree or diploma course; the first dealing with basic theory and simpler problems—topics generally covered in the first year. The main advantage of the books is that theory is amplified by worked examples. Should prove of value but cannot claim to fill a gap in the literature.

KUTATELADZE, S. S.

69

Fundamentals of heat transfer. Tr. of 2nd Russian ed. Ed. by R. D. Cess. Arnold, ©1963. xv, 485p, tables, diags, refs. 90s.

B Comprehensive treatise on heat transfer of considerable interest and value. A stimulating new presentation in which analytical theories receive support from Russian experimental data. The author is active in the fields of turbulent heat transfer and of two phase flow and these topics are among those which receive extensive coverage. The speedy translation by another (heat) transfer expert has produced an up-to-date account, which has benefited by some editing and by the inclusion of English translations and editions in the list of references.

NESMEYANOV, A. N.

70

Vapor pressure of the elements. Ed. by R. Gary. Amsterdam, London, Elsevier, 1963. xi, 462p, tables, diags, refs. 5 gns.

C Compiled by the Director, Institute of Elemento-Organic compounds, Academy of Sciences, Moscow, and edited in the English edition by a member of the National Bureau of Standards, Washington, this work provides a first-class source of reference on the subject, including details of methods of vapour pressure measurement. A book of great value to those engaged in research in the electronics and radio industries, in space research, vacuum metallurgy, etc.

PARKER, E. N. and others

71

Astrophysics and the many-body problem. By E. N. Parker, J. S. Goldstein, A. A. Marududin and V. Ambegaokar. NY, Amsterdam, Benjamin, 1963. 4, 438p, diags, refs. *Brandeis University Summer Institute lectures in theoretical physics*.

C The book comprises four specialized articles on: (a) plasma dynamics, (b) stellar evolution, (c) dynamics of imperfect crystals, and (d) Green's functions in many-body problems. Each is competently written. Article (c) is particularly long and detailed, and is a good introduction to the subject. Article (a) suffers a little from lack of explanation and continuity in some sections. Article (b) is brief (ten pages), but a valuable contribution. Article (d) is a useful review of techniques.

RADO, G. T. and SUHL, H. eds

72

Magnetism. Vol. III, Spin arrangements and crystal structure, domains, and micromagnetics. NY, London, Academic P, 1963. xv, 623p, illus, tables, diags, refs. \$18; 128s 6d.

C There are twelve chapters separately covering the following topics: magnetism in non-metals, exchange interactions, neutron scattering, spins in ionic structures, spins in metals, thin films, permanent magnet materials, micromagnetics, domain structures, switching in films, non-metallic ferromagnets, and magnetic oxides. The treatment in each case is authoritative, advanced, and up-to-date, well-illustrated, and with extensive references.

SHERMAN, P. ed.

73

Rheology of emulsions: proceedings of a symposium held by the British Society of Rheology at the St George's Hotel, Harrogate, October 1962. Oxford, NY [etc], Pergamon P, 1963. vii, 139p, illus, tables, diags, bibliogs. 50s.

B-C Subjects dealt with: Droplet flocculation, hydrodynamic aspects, diffuse double layers, particle aggregation, stabilization, dielectric behaviour, as well as the general question of the effect of deformability of dispersed particles on flow relations. There is also an interesting chapter on the physical structure of ice-cream.

539.1 Nuclear Physics

TOLANSKY, S.

74

Introduction to atomic physics. 5th ed. Longmans, 1963. x,452p, plates, tables, diags. 30s.

B Standard textbook intended for second-year university courses in physics and should be included in general scientific libraries. This edition includes reviews of developments which have taken place since the fourth edition of 1956 in accelerators, thermonuclear reactions, bubble chambers, and recently discovered short-lived particles.

54 Chemistry

BACON, G. E.

75

Applications of neutron diffraction in chemistry. Oxford, NY, [etc], Pergamon P, 1963. xi,144p, illus, tables, diags, bibliogs. 2 gns. *International encyclopaedia of physical chemistry and chemical physics*.

C Account of the contribution of neutron-diffraction methods in the solution of problems in chemistry and description of new knowledge which has been obtained. For graduates and research workers.

FERGUSON, L. N.

76

Modern structural theory of organic chemistry. Englewood Cliffs (NJ), Prentice-Hall, 1963. viii,600p, tables, diags, refs. 100s. *Prentice-Hall chemistry series*.

C Useful monograph for final-year undergraduates and post-graduates requiring orientation in this basic field of chemistry. Deals lucidly with chemical bonding, dipoles, intramolecular forces, charge distributors and molecular properties, and absorption spectra.

FLETT, M. ST C.

77

Characteristic frequencies of chemical groups in the infra-red. Amsterdam, London, Elsevier, 1963. ix,98p, tables, bibliogs. *Elsevier monographs*.

B Small, well arranged, and adequately documented aid for organic chemists giving correlation charts of characteristic absorption bands of organic compounds and brief accounts of the absorption spectra of over seventy types of organic compounds and groups.

KATRITZKY, A. R. *ed.*

78

Advances in heterocyclic chemistry; vol. 1. NY, London, Academic P, 1963. xiv,458p, tables, diags, refs. \$14.

C An excellent selection of topics and contributors make this a valuable work for research workers. The treatment of prototropic tautomerism begun in the previous volume is continued. Free radical substitutions and reactions with diazomethane of many heterocyclic compounds are described. The chemistry of quinoxalines, 1 : 3-oxazines, selenazoles, and iso-oxazoles as well as special reactions of pyridines, pyrroles, and indoles are described.

LLOYD, D.

79

Alicyclic compounds. Arnold, 1963. ix,171p, diags, bibliogs. 35s.

B Designed to supplement textbooks of Organic Chemistry for degree students in which alicyclic chemistry is not treated adequately. The account is selective and the treatment of natural products and of reaction mechanisms is virtually non-existent. The non-benzenoid aromatic compounds are well described, but the treatment of the non-aromatic compounds is patchy. Very few references are included.

RAMACHANDRAN, G. N. *ed.*

80

Aspects of protein structure: proceedings of a symposium held in Madras 14-18 January 1963 . . . NY, London, Academic P, 1963. x,380p, illus, tables, diags, refs. 84s.

C About thirty papers by many distinguished authors summarize recent results and the present position. Main sections deal with X-ray diffraction studies, the genetic code, the results of spectroscopic and rotatory dispersion studies, electron microscopic studies, and of chemical studies. The papers are documented and followed by discussion.

VAN OLPHEN, H.

81

Introduction to clay colloid chemistry. NY, Interscience, 1963. 301p, illus. 75s.

C An advanced treatment of clay suspensions.

55 Geology. Meteorology

BULLEN, K. E. 82

Introduction to the theory of seismology. 3rd ed. CUP, 1963. viii,381p, tables, diags, refs. 57s 6d.

B-C The standard work on the subject, clearly and concisely written and providing detailed mathematical treatment of elasticity, the theory of wave-motion, the constitution of the crust and interior of the earth, the principles of the seismograph, etc. An extensive bibliography is included.

DUFOUR, L. and DEFAY, R. 83

Thermodynamics of clouds. NY, London, Academic P, 1963. xiii,255p. 80s. *International Geophysics series.*

B Coherent and rational account requiring only a little knowledge of general thermodynamics and placing at the disposal of meteorologists a working tool to the problems encountered in this branch of the subject. Fairly extensive bibliography. Author index as well as subject index.

57 Anthropological and Biological Sciences

CARTHY, J. D. and DUDDINGTON, C. L. eds 84

Viewpoints in biology, 2. Butterworths, 1963. ix,248p, illus, tables, diags, refs. 65s.

B Six authoritative reviews of unrelated topics: micro-organisms and food; fungicides; arthropods as predators; anatomical and physiological adaptations in diving mammals; kinetics of ion movement in aquatic animals; and palaeobotanical techniques.

NEWELL, G. E. and NEWELL, R. C. 85

Marine plankton: a practical guide. Hutchinson Educational, 1963. 207p, tables, diags, refs. 21s.

B Concise introduction to the practical study of marine plankton, including chapters on collecting gear and methods, quantitative analysis of samples, preservation, and identification, the latter based essentially on well-drawn figures of the planktonic organisms found in British waters, supplemented by short descriptive notes.

577.1 Biochemistry

LEITCH, J. M. and RHODES, D. N. eds 86

Recent advances in food science—3: biochemistry and biophysics in food research. Butterworths, 1963. xiii,325p, illus, tables, diags, refs. 70s.

C (1) Protein biochemistry; (2) laboratory techniques for study of proteins; (3) non-conventional food proteins; (4) flavour and odour; (5) water-binding in relation to foods; (6) structural elements of vegetable foods. Thirty-one individual papers.

58 Botany

DAVIS, P. H. and HEYWOOD, V. H. 87

Principles of angiosperm taxonomy. O & B, 1963. xx,556p, diags, refs. 95s.

B-C Comprehensive survey of the subject for advanced students, and a major work in its field. Among other aspects, numerical and chemical taxonomy are surveyed. A very full bibliography and a subject index are provided.

59 Zoology

ATKINSON-WILLES, G. ed. 88

Wildfowl in Great Britain. HMSO, 1963. Illus, plates, maps, bibliog. 45s. *Nature Conservancy monograph, no. 3.*

B-C Co-operative survey of the winter distribution of the Annetidae in Great Britain, undertaken by the Wildfowl Trust for the Nature Conservancy, with regard to scientific management and policy.

GLASGOW, J. P. 89

Distribution and abundance of tsetse. Oxford, NY, [etc], Pergamon P, 1963. 25p, illus. 60s.

C An up-to-date account of the biology of tsetse as well as a textbook of ecology.

6 APPLIED SCIENCES**615 Pharmacy**GARATTINI, S. and SHORE, P. A. *eds*

90

Advances in pharmacology. Vol. 2. NY, London, Academic P, 1963. viii, 392p, illus, tables, diags, refs. 86s.

C There are six chapters in this volume covering the latest information on drug toxicity, myasthenia gravis, drug action and genetics, hormones and atherosclerosis, nitrogen mustards, and lastly cancer chemotherapy. Each chapter is well documented with a full bibliography but in a book of this type the assessment of the subject matter is not always critical.

62 Engineering and TechnologyCLAUSER, H. R. and others, *eds*

91

Encyclopedia of engineering materials and processes. NY, Reinhold; London, C & H, 1963. 787p. 200s.

D The collective work of nearly 250 contributors. Many of the articles touch on subjects that have not yet reached the textbooks. Valuable reference work for the works library or design office.

EVANS, U. R.

92

Introduction to metallic corrosion. 2nd ed. Arnold, 1963. x, 253p, tables, diags. 30s.

B Now fully revised, this excellent work by one of the world's leading authorities on corrosion and corrosion theory provides a concise introduction to, and a general review of the subject. Although primarily intended as a text book for students, the book should also be useful for those in industry who have an interest in corrosion prevention and control, but who do not feel the need for a more advanced and comprehensive work of reference.

SHREIR, L. L. *ed.*

93

Corrosion; vol. 1, corrosion of metals and alloys; vol. 2, corrosion control. Newnes, 1963. Illus, tables, diags, refs. 12 gns.

C Compiled by a team of 100 British and American corrosion scientists and headed by the Head of the Department of Metallurgy, Sir John Cass College, London, this work will provide one of the most authoritative reference sources on corrosion theory, prevention, and control. The price is fully justified and the two volumes deserve to be in the hands of all libraries, research workers, and corrosion engineers concerned with some aspect of corrosion study or corrosion prevention and control.

THOMPSON, G. V. E. and GATLAND, K. W. *eds*

94

Materials in space technology. Iliffe, for the British Interplanetary Society, 1963. 9, 275p, illus, plates, tables, diags, refs. 65s.

C Describes at length the use of aluminium, magnesium, beryllium, steel, and graphite. Properties of polymers and their applications to space technology are of special interest.

621 Mechanical and Electrical Engineering

GOODWIN, A. B.

95

Power hydraulics. Cleaver-Hume, in association with Macmillan, 1963. viii, 280p, tables, diags, refs. 2 gns.

B General introduction to the theory and technology of oil hydraulic machinery and transmission systems, including basic principles, pipe flow, circuits, valves, pumps, motors, accumulators, and effects of compressibility. Logical lay-out, clear explanations, examples, and exercises.

621.3 Electrical Engineering

MALMSTADT, H. V. and ENKE, C. G.

96

Electronics for scientists: principles and experiments for those who use instruments. By H. V. Malmstadt and C. G. Enke, assisted by E. C. Toren. NY, Benjamin, 1962. xi, 619p, illus, tables, diags. \$11.50.

B A laboratory-oriented "teach yourself" course for chemists, biologists, and other scientists and advanced students, who have little or no background in electronics, designed to enable them to understand and use electronic circuits and instruments and to adapt them to their own requirements.

ROBERTSON, A. E.

97

Microphones. 2nd ed. London, Iliffe; NY, Hayden, 1963. 12,357p, illus, plates, tables, diagrs, refs. 75s. *BBC engineering training manual*.

B First published in 1951, this is an up-to-date training manual for BBC technicians. It is for the user rather than the designer and any mathematical treatment is relegated to appendices. It gives very complete cover.

621.7 Workshop Practice

DAVIES, A. C.

98

Science and practice of welding. 5th ed. CUP, 1963. x,[640]p, plates, tables, diagrs. 25s.

B New sections on pyrometers, medium-pressure acetylene generators, flame and arc hard surfacing, welding of low alloy steels, aluminium and its alloys, and various welding processes; revised sections on metallurgy of ferrous metals and many new drawings and illustrations included. For students of the City and Guilds courses of ordinary and advanced grades and operators attending technical training classes.

PRITCHARD, R. T.

99

Workshop processes for mechanical engineering technicians. Vol. II. EUP, 1963. x,214p, illus, diagrs. 12s 6d. *General technical series*.

B This second volume deals with the theory and practice of machining processes; methods of testing and inspection, and processes requiring the use of heat such as casting, forging, and heat treatment. A readable, well-illustrated book which should prove of value to Technical Course and Mechanical Craft Students.

628 Public Health Engineering

RICH, L. G.

100

Unit processes of sanitary engineering. NY, Wiley, 1963. ix,190p, illus. \$15. *Addison-Wesley series in the engineering sciences*.

B Comprehensive textbook dealing with principles and theory of processes used in treatment of industrial waste water and describing processes applicable to particular wastes.

63 Agriculture. Forestry. Livestock. Fisheries

CLARKE, H. G.

101

Commercial sheep management. Crosby Lockwood, 1963. xii,140p, illus, table, diagrs. 21s.

C A very useful book in its field and likely to be of use to both the farmer and the research worker. As the title suggests the book is concerned with the commercial side of sheep management, and not with practical farming of sheep. It attempts to link the results of sheep research and sheep farming, however, for the purpose of helping the sheep farmer when he considers the commercial aspects.

CULPIN, C.

102

Farm machinery. 7th ed. Crosby Lockwood, 1963. vi,728p, illus. 2 gns. *Agricultural and horticultural series*.

B Written for farmers and agricultural students, this work contains information on the construction, maintenance, and use of farm power, implements and machines, and also discusses the policy of farm mechanization.

IVINS, J. D. and MILTHORPE, F. L. eds

103

Growth of the potato: proceedings of the Tenth Easter School in Agricultural Science, University of Nottingham, 1963. Butterworths, 1963. x,328p, illus. 70s.

B Detailed and up-to-date account of the growth and production of the potato, written mainly to assess the current understanding of the ecological systems in agriculture.

SYKES, G.

104

Poultry: a modern agribusiness. With two chapters on housing by G. Ffiske. Crosby Lockwood, 1963. xxiii,242p, tables, diagrs. 25s.

B Principles of business as it is applied in agriculture, and basically within the poultry industry. Success of the poultry business both in the U.S.A. (much of the illustrative material comes from here as it is far in advance of this country) and in Britain can be shared by other aspects of agriculture such as the meat industry. A well set out book full of facts and figures; more likely to be of interest to the business farmer than to the research worker.

65 Business Techniques. Management

BATES, J. and PARKINSON, J. R. 105

Business economics. Oxford, Blackwell, 1963. xiii, 328p, tables, refs. 30s.

A This excellent book explains in non-technical terms how economic theory helps in understanding the main aspects of business behaviour. Considerable attention is given to marketing and finance and to the forecasting and control functions of business. The authors have succeeded in making economic theory and techniques understandable and relevant to people engaged in business.

ELLIOTT, B. B. 106

History of English advertising. London, Business Pubs., in association with Batsford, 1962. xvi, 231p, plates, tables. 35s.

B A valuable book, relating to a field hitherto comparatively ill-documented. The author has provided a fascinating account of the growth of advertising in this country based on extremely thorough research. The book is a "must" for any young man or woman working in the communications field, and provides useful background to the I.P.A. examinations. Of value, too, to the serious social historian.

GREAT BRITAIN. Air Ministry. 107

Origins and development of operational research in the Royal Air Force. HMSO, 1963. xx, 218p, illus, tables. 35s. *Air publication* 3368.

A Historical account of the types of problem studied by the operational research groups of the RAF, giving details of dates, places, and workers and a little about methods. The four appendices reproduce key documents in the development of the activity.

66 Chemical Technology

GITTS, J. H. 108

Uranium. Butterworths, 1963. xiii, 623p, illus, tables, diagrs, refs. 6 *gns. Metallurgy of the rarer metals*, no. 8.

C Excellent appraisal of world literature on the metallurgy of uranium covering its occurrence, extraction, fabrication, physical and mechanical properties, effects of irradiation and thermal cycling, and the most complete compilation of data on uranium alloys yet published.

MACHINE DESIGN 109

Non-ferrous metals book. Cleveland (Ohio), Penton, 1963. 196p, \$2.

B-D This is another of the *Machine Design* handbooks, compiled by its editorial staff. It follows the usual style of a design section—rather more than half the book—and a product directory. In the first part are fourteen chapters, each on a different metal, and twelve on processes.

SIMMONS, N. O. 110

Feed milling and associated subjects. 2nd ed. Leonard Hill, 1963. xxiii, 377p, plates, tables, diagrs. 4 *gns.*

C Intake, storage, handling, and cleaning of raw materials. Machinery for drying, grinding, blending, mixing, cubing, and pelleting. Packing and storage of finished products. Production costs.

67/68 Manufactures

CHEVASSUS, F. and BROUTELLES, R. de 111

Stabilization of polyvinyl chloride. Tr. by C. J. R. Eichhorn and E. E. Sarmiento. Arnold, 1963. xi, 385p, tables, diagrs, refs. 80s.

C The first and only comprehensive study of a most important field of plastics technology. It includes a first-class résumé of knowledge on the theory of PVC degradation and stabilization, a consideration of various types of stabilizer, and a practical study of the stabilization of PVC. Thus it will prove invaluable to academics and technologists alike.

GORDON, M. 112

High polymers: structure and physical properties. 2nd ed. Iliffe, for the Plastics Institute, 1963. 158p, plates, tables, diagrs, refs. 35s.

B New, up-to-date, edition of this useful text which aims to present the scientific basis of polymer technology. Following discussions of polymer geometry and the determination of molecular size, the effects of certain molecular features on the bulk properties of the polymer are discussed. The latter include glass transitions, elasticity, swelling, solution viscosity, melting processes, and solubility. Carefully selected references are included.

- PETAKHOV, B. V. 113
Technology of polyester fibres. Tr. from the Russian by M. F. Mullins. Ed. by B. P. Mullins. Oxford, NY, [etc], Pergamon P, 1963. xiv, 89p. 30s.
B Monograph dealing with the synthesis of polyethylene terephthalate and its physico-chemical properties and the production of fibres, their properties, dyeing, and uses.

69 Building Industry

- CHI, M. and BIBERSTEIN, F. A. 114
Theory of prestressed concrete. Englewood Cliffs (NJ), Prentice-Hall, ©1963. 252p, illus, tables, diagrs, bibliogs. *Civil engineering and engineering mechanics series*, 64s.

A Introduction to the subject suitable for general technical readers, deals only with the academic approach to the theory. Its superficial excursions into such important problems as anchorage zone force barely serve to indicate their existence. The work is, of course, based upon the American Code allowable stresses and upon American concrete technology practice.

- HARRIS, J. D. and SMITH, I. C. 115
Basic design and construction in prestressed concrete. Chatto & Windus, 1963. xvii, 265p, illus, tables, diagrs. 50s.

B An excellent book whose treatment of theory is allied to the demands of practice. Its arguments are developed from first principles and are well illustrated by photographs and diagrams and at the end of the book is a collection of charts and tables that will be of great use in any designer's office. Should be of great assistance to lecturers and students at technical colleges and universities and to engineers in their early days of practice.

- KINZEY, B. Y. and SHARP, H. M. 116
Environmental technologies in architecture. Englewood Cliffs (NJ), Prentice-Hall, 1963. xxiv, 788p, plates, tables, diagrs, refs. 96s.

B Considers those services directly related to human needs from a physiological and psychological viewpoint: heating and ventilating, acoustics, sanitation, electrical machinery, and power distribution. Includes material rarely brought together for builders and architects. Gives engineering design principles; references and problems (no solutions) to each chapter; full index. Comprehensive, detailed, up to date, clearly and concisely written, and illustrated. Stress on human needs gives unusually balanced view of problems involved.

- MCKAY, W. B. 117
Building construction. Vols. 1 and 2 together; vols. 3 and 4 together. Longmans, 1963. [763p], illus, diagrs. 47s 6d; 55s.

B Four volumes previously appeared separately in limp covers: now available in two hard-cover volumes. No important textual changes, but less emphasis on the crafts and more attention given to basic building materials and their application in elements of construction. Together these volumes provide a complete and well illustrated textbook for National Certificate purposes; also recommended for diploma students.

- PARKER, H. 118
Simplified design of structural timber. 2nd ed. NY, Wiley, 1963. 265p, illus. *Parker's simplified series*.

B Explains design of members and joints used in the more common forms of timber construction. Safe-load tables are given for all types of timber members, including beams, girders, joists, rafters, plank floors and roofs, laminated floors, columns, bolted joints, split-ring connectors, steel rods, and stud walls.

7 THE ARTS

77 Photography

- BOUCHER, P. E. 119
Fundamentals of photography, with laboratory experiments. 4th ed. Princeton (NJ), Van Nostrand, ©1963. xiv, 535p, illus, tables, diagrs, refs. \$10; 60s.

A-B Thorough and current: basic physical and photochemical theory, techniques, and experiments for instructor, student, or amateur. Incorporates excellent lens chapter, finer grain, and faster films, developing and printing innovations, additive and subtractive colour mixing, filters, X-rays, microfilms, and movies.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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with annotations



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ASLIB BOOK LIST VOL. 29 NO. 3 MARCH 1964

Preface

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- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
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Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

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0 SCIENCE AND KNOWLEDGE

120

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH *and* THE BRITISH COUNCIL
Scientific research in British universities and colleges 1962-63. HMSO, 1963.
669p. 32s 6d.

D Latest annual volume listing, by universities and departments, the research projects of the staff by name. Indexes to individuals, and to specific topics.

31 Statistics

121

BUCKLAND, W. R. *and* FOX, R. A.
Bibliography of basic texts and monographs on statistical methods, 1945-1960.
2nd ed. O & B, for the International Statistical Institute, 1963. vii, 297p, tables.
35s.

D Useful guide to the reliable books on statistical method, containing contents lists, and extracts from reviews in journals, of nearly 200 texts, the most important in the field, with a supplementary list of titles.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

122

FLEGG, H. G.
Boolean algebra and its applications, including Boolean matrix algebra.
Blackie, 1964. 250p, diags. 50s.

B Concerned with the application of Boolean algebra to switching circuits. Of interest to computer and control engineers, as well as university and technical college students, and applied mathematicians.

ROSENBLATT, M. *ed.*

123

Proceedings of the symposium on time series analysis: Brown University, 1962.
NY, Wiley, 1963. 125p. 125s. *SIAM series in applied mathematics.*

C Up-to-date review of research work in the field of time series and statistic processes.

52 Astronomy. Surveying. Geodesy

124

CRONE, D. R.
Elementary photogrammetry. Arnold, 1963. 191p, tables, diags, bibliog. 28s.

B Concise and clear summary, intended for the Civil Engineering degree student, of the essentials of photogrammetry, dealing mainly with the geometrical aspects of air photographs and with simple methods of plotting and measurement.

MENZEL, D. H. *and* BHATNAGAR, P. L. *and* SEN, H. K.

125

Stellar interiors. C & H, 1963. xiii, 317p, tables, diags. 65s. *International astrophysics series, vol. 6.*

B Treatment of stellar constitution including thermodynamics and energy transfer in systems in which radiation is of significance, stellar energy sources and stellar models. All stages of the theoretical analysis are correlated with the results of observational astrophysics.

53 Physics

126

BRADLEY, R. S. *ed.*
High pressure physics and chemistry. 2 vols. NY, London, Academic P, 1963.
xi, 444p; xii, 361p, tables, diags, refs. 100s; 80s.

C Detailed and advanced survey of research in physics, chemistry, and geochemistry at very high pressures by authoritative contributors.

FRIEDEL, J. *and* GUINIER, A. *eds*

127

Metallic solid solutions: a symposium on their electronic and atomic structure.
NY, Amsterdam, Benjamin, 1963. Illus, diags, tables, refs. \$19.75. *1962 Orsay lectures.*

C Very useful compilation of papers presented at a recent conference. One main group deals with theoretical and experimental evidence for appropriate models of the electronic structure, the other with various effects associated with ordering or clustering of solute atoms.

- FRONSDAL, C. *ed.* 128
Weak interactions and topics in dispersion physics: lecture notes from the Second Bergen International School of Physics—1962. NY, Benjamin, 1963. xi, 332p, diags, refs.
C Set of eighteen brief, and therefore somewhat disconnected, papers, accompanied by a photographic reprint of a classic article on dispersion relations (S. Mandelstam, *Reports on Progress in Physics*, vol. 25, 1962).
- KAPUSTIN, A. P. 129
Effects of ultrasound on the kinetics of crystallization. Tr. from the Russian. NY, Consultants Bureau, 1963. 65p, illus, tables, diags, bibliog. \$12.50. Paperback.
C Highly technical book on the use of ultrasonics during the crystallization of solids from melts, or of solutes from solution. The problems involved in crystal growth are becoming highly important technologically on account of the steadily increasing uses of crystals. The detailed work described in this monograph is not accessible elsewhere in English. There are numerous illustrations but the printing has not been done on glossy paper. (Russian text, Moscow, 1962.)
- RAMBALLABH 130
Hydrodynamic superposability. Asia Publishing House, 1963. 45p, bibliog. 1963. 9s. Paperback. *Uttar Pradesh Scientific Committee Monographs*.
C The author considers those solutions of the incompressible non-linear Navier-Stokes equations for which given flows can be supervised linearly. This leads to a classification of some exact solutions, including several well-known ones.
- SMITH, C. J. 131
Degree physics. Part V, electricity and magnetism. Arnold, 1963. vii, 775p, tables, diags. 70s.
B This revised third edition now includes some more modern aspects of the subject and serves as a useful reference book for the undergraduate. Its extreme thoroughness tends to bury many of the basic physical principles.
- SMITH, H. J. and HARRIS, J. W. 132
Basic thermodynamics for engineers. Macdonald, 1963. xvi, 288p, tables, diags. 30s.
B Attempt to present sound, elementary engineering thermodynamics to first-year engineering students. Where, as for the most part, the book adheres to the Keenan approach it is an advance on some older works. Elsewhere it is open to criticism. Too elementary for a university course.
- 539.1 Nuclear Physics**
- FULTON, T. and others 133
Elementary particle physics and field theory. By T. Fulton, G. Kallen, J. D. Jackson and C. Fronsdal. Notes by K. Gudmundsson and E. Sarachik. NY, Amsterdam, Benjamin, 1963. vii, 532p, tables, diags. *Brandeis University Summer Institute Lectures in theoretical physics*, 1962. vol. 1.
C Courses of lectures on topics selected from widely differing departments of the theory of elementary particles. (i) Resonances in strong interaction physics: a self-contained account regarding the resonances as "particles". (ii) Topics in quantum electrodynamics: a careful exposition of the interacting electromagnetic and Dirac fields from a modern viewpoint. Starting-point: advanced quantum mechanics. (iii) Weak interactions: follows a policy of discussing a selection of topics thoroughly. (iv) Group theory and applications to particle physics: almost entirely devoted to the theory of continuous matrix groups.
- LITTLEFIELD, T. A. and THORLEY, N. 134
Atomic and nuclear physics: an introduction. Princeton (NJ), London, [etc], Van Nostrand, 1963. viii, 436p, illus, tables, diags, bibliog. 2 gns.
B Based on lectures at the Extra-mural Department and to applied science students in electrical and mechanical engineering and in metallurgy, it aims to meet the needs of students of pure and applied science also in colleges of advanced technology. Numerous problems are included.

NISHIJIMA, K. 135
 Fundamental particles. NY, Amsterdam, Benjamin, 1963. xi,408p, tables, diags, refs. \$11.85. *Lecture notes and supplements in physics.*

C Based on a course of lectures given in 1961-2, provides a comprehensive survey of the more theoretical aspects of elementary particles at that time. Good account of the relevance of invariance principles, and of the more modern computational techniques. A thorough familiarity with quantum field theory is assumed.

VALENTE, F. A. ed. 136
 Manual of experiments in reactor physics. NY, Macmillan; London, Collier-Macmillan, 1963. xv,335p, illus, tables, diags, bibliogs. 55s.

B-C Prepared under auspices of US Atomic Energy Commission for colleges or universities with nuclear reactor facilities. Contains twenty-three experiments grouped according to apparatus required to carry them out: (a) experiments requiring only steady sources of neutrons; (b) those requiring steady sources of neutrons and a subcritical assembly; (c) those requiring a sigma pile or a subcritical assembly and pulsable source of neutrons.

54 Chemistry

COOPER, T. 137
 Introduction to mining chemistry. Leonard Hill, 1963. xv,439p, tables, diags. 50s.

B Elementary textbook covering aspects of chemistry which are of importance to students of mining; others in the mining industry may find its concise presentation and emphasis on experiment of interest and value.

KRELL, E. 138
 Handbook of laboratory distillation. Tr. by C. G. Verver, ed. by E. C. Lumb. Amsterdam, London, Elsevier, 1963. x,561p, illus, tables, diags. 100s.

B Originally published Berlin, 1958. Contains a simple presentation of the physico-chemical fundamentals of distillation and of the theory of plate and packed columns together with a wealth of practical information on laboratory distillation. In general, the practical aspects are presented much better than the theory.

LIPSCOMB, W. N. 139
 Boron hydrides. NY, Amsterdam, Benjamin, 1963. ix,275p, tables, diags, refs. \$15.40. *Physical inorganic chemistry series.*

C The structures, physical properties, and chemical reactions of the boron hydrides are summarized and interpreted by valence band and molecular orbital theory.

STOKES, A. R. 140
 Theory of the optical properties of inhomogeneous materials. Spon, 1963. xii,95p, tables, diags, refs. 35s.

C Brief outlines of theory of birefringence, optical rotation, and light scattering, intended for use by biophysicists and biochemists.

55 Geology. Meteorology

POTTER, P. E. and PETTJOHN, F. J. 141
 Paleocurrents and basin analysis. Berlin, Springer-Verlag, 1963. 296p, illus, plates. 80s.

C Comprehensive treatise on sedimentation dynamics in depositional basins.

57 Anthropological and Biological Sciences

MOURANT, A. E. and ZEUNER, F. E. eds 142
 Man and cattle: proceedings of a symposium on domestication at the Royal Anthropological Institute, 24-26 May 1960. Royal Anthropological Institute, 1963. 166p, plates, illus, tables, refs. 3gns.

C Collection of papers read at the Royal Anthropological Institute in London in 1960. Deals with many aspects of the domestication of cattle in Europe and elsewhere, ranging from the history of the subject to problems of genetics and chemical questions such as cattle haemoglobins. Written and edited by recognized authorities, the book will readily find a place on the library shelves of zoological and veterinary institutions.

CAMPBELL, D. H. *and others*

143

Methods in immunology: a laboratory text for instruction and research. By D. H. Campbell, J. S. Garvey, N. E. Cremer, and D. H. Sussdorf. NY, Amsterdam. Benjamin, 1963. xiv, 263p, illus, tables, diagrs, refs. \$9.60.

B A useful aid to teachers and their pupils. Laboratory technicians may also find it helpful. Part 1 is general, it deals with methods of bleeding and injecting laboratory animals and with physical methods such as centrifugation, pH determination, freeze-drying, etc. Part 2 consists of a series of exercises for students and deals with preparation of antigens, antisera, and antibodies and with antigen-antibody reactions. Part 3 is short and gives methods for preparing some commonly used reagents. References are not numerous, they are scattered through the text and are almost entirely to American publications.

SOCIETY FOR EXPERIMENTAL BIOLOGY

144

Cell differentiation. CUP, for the Company of Biologists, 1963. vi, 404p, plates, diagrs, refs. 60s. *Symposia of the Society for Experimental Biology*, no. 17.

C Problem of differentiation of cells of different form and function from a single cell has been examined in the symposium by twenty distinguished experts working with plant, animal, or microbial systems at the molecular, cellular, or tissue level.

COLLINS, C. H.

145

Microbiological methods. Butterworths, 1964. 328p, illus. 50s. *Laboratory Techniques series*.

B Useful text for students preparing for university degrees or professional examinations in microbiology. Also invaluable as a laboratory handbook in public health, food, and medical laboratories.

577.1 Biochemistry

ALSTON, R. E. *and* TURNER, B. L.

146

Biochemical systematics. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xii, 404p, illus, tables, diagrs. 80s.

C The authors are both botanists and the systematic side of the subject appears to be treated more authoritatively than the biosynthetic aspects; this applies to both the descriptive treatment and the numerous references and limits the value of this book which, however, contains much material of interest to research workers in botany, genetics, organic chemistry, and biochemistry.

CHANCE, B. *ed.*

147

Energy-linked functions of mitochondria: papers presented at the first colloquium of the Johnson Research Foundation of the University of Pennsylvania, Philadelphia, April 13, 1963. NY, London, Academic P, 1963. xi, 282p, tables, diagrs. 36s.

C Fifteen research papers by international authors followed by a discussion dealing with a field in which there has been rapid and important recent progress. The papers deal mainly with reductions occurring on mitochondria, especially with their mechanism and with the associated energy changes, including the binding of metal ions and the possible role of mitochondria in bacterial photosynthesis.

58 Botany

RUBIN, B. A. *and* ARTSIKHOVSKAYA, Y. V.

148

Biochemistry and physiology of plant immunity. Tr. from the Russian by H. Wareing, tr. edited by E. Griffiths. Oxford, NY, [etc], Pergamon P, 1963. ix, 358p, illus. 100s.

B-C The first attempt to bring together all available material on the questions dealt with in this book was undertaken in 1948, since which time a great many investigations have been carried out both in the USSR and other countries. This work tries to summarize the results of these investigations.

* 59 Zoology

GOODEY, J. B.

149

Laboratory methods for work with plant and soil nematodes. 4th ed. HMSO, 1963. iv, 72p, illus. 8s 6d. *Ministry of Agriculture, Fisheries, and Food, technical bulletin no. 2.*

B Authoritative work which has been considerably revised in this edition. It brings together the varied techniques in use throughout the world in the research into plant and soil nematodes.

LANE-PETTER, W. *ed.*

150

Animals for research: principles of breeding and management. NY, London, Academic P, 1963. xviii, 531p, illus, tables, diagrs, refs. 5 *gns.*

B This book prepared by well-chosen contributors, sixteen from England and four from the U.S.A., covers all aspects of breeding, feeding, management, housing, use, and with the diseases of all the animals commonly used in laboratories. Mice and rats are particularly fully covered. Two excellent chapters are concerned with germ-free and with pathogen-free animals. It will doubtless become the standard book for all concerned with the production and use of these most important aids to research.

6 APPLIED SCIENCES

CZERNI, S. and SKRZYNSKA, M. *eds*

151

Shorter technological dictionary: Polish-English/English-Polish. Oxford, NY, Pergamon P; Warsaw, Wydawnictwa Naukowo-Techniczne, ©1963. [6], 244p. 70s.

D Word-for-word entries of over 10,000 terms, but not including even gender for Polish nouns, although giving phonetic pronunciation for English words. Handy for popular usage.

62 Engineering and Technology

621 Mechanical and Electrical Engineering

TITCOMB, G. R. A.

152

G.I. engineering science. Hutchinson, 1963. 349p, plate, tables, diagrs. 13s 6d. *Hutchinson technical education.* Paperback.

A Material selected from the author's *Fundamentals of engineering science* (1961) covering first-year engineering science only.

621.039 NUCLEAR ENGINEERING

DAWSON, J. K. and SOWDEN, R. G.

153

Chemical aspects of nuclear reactors. Vol. 1, gas-cooled reactors; vol. 2, water-cooled reactors; vol. 3, miscellaneous topics. Butterworths, 1963. xv, 268p; xvi, 388p; xiii, 201p. Illus, tables, diagrs, bibliogs. 55s; 75s; 50s.

C For scientists and technologists in the nuclear field, a comprehensive and up-to-date account of the chemical background to problems in designing nuclear reactors. Also reviews critically the available literature 1961-2. Important work by scientists at Atomic Energy Research Establishment, Harwell.

HARVEY, J. F.

154

Pressure vessel design: nuclear and chemical applications. Princeton (NJ), Van Nostrand, 1963. xiv, 274p, illus, tables, diagrs, bibliogs. 76s. *Van Nostrand nuclear science series.*

B Written from designer's viewpoint to take the engineering student or graduate through first steps and practical design considerations in nuclear, chemical, or process equipment vessel design. Emphasis on stress analysis.

THIE, J. A.

155

Reactor noise: an AEC monograph. Prepared under the direction of the American Nuclear Society for the Division of Technical Information, United States Atomic Energy Commission. NY, Rowman & Littlefield, 1963. xiii, 262p, tables, diagrs, bibliogs. 50s. *Monograph series on nuclear science and technology.*

B-C For scientists or engineers who wish to perform and/or interpret various types of reactor experiments. Early chapters develop theoretical basis for methods of noise analysis. Second part of the book reviews the many experiments in which these methods are applied to reactors.

621.3 Electrical Engineering

156

DUMMER, G. W. A. and ROBERTSON, J. M. *eds*

American subminiature electronic component parts data annual, 1963-64. Oxford, NY, [etc], Pergamon P, 1963. xiii, 679p, illus, tables, diagrs. 200s.

D Data sheets grouped under type of component and arranged alphabetically, with detailed indexes to components and manufacturers. No indication of British agents or distributors.

DUMMER, G. W. A. and ROBERTSON, J. M. *eds*

157

British miniature and microminiature electronic assemblies data annual, 1963-64. Oxford, NY, [etc], Pergamon P, 1963. xii, 335p, illus, tables, diagrs. 5 gns.

D Manufacturers' data sheets grouped by type of assembly. Only indexed by alphabetical list of manufacturers giving their products.

DUMMER, G. W. A. and ROBERTSON, J. M. *eds*

158

British miniature electronic components data annual, 1963-64. Oxford, NY, [etc], Pergamon P, 1963, xviii, 1356p, illus, tables, diagrs. 200s.

D Collection of data sheets arranged alphabetically under component or related part. Specific index to components and alphabetical index by manufacturers.

DUMMER, G. W. A. and ROBERTSON, J. M. *eds*

159

British transistor diode and semiconductor devices data annual, 1963-64. Oxford, NY, [etc], Pergamon P, 1963. lxxi, 1610p, tables, diagrs. 200s.

D Data sheets grouped in three sections, transistors, diodes, devices, each arranged alphabetically by manufacturer. Index to applications and list of United Kingdom agents and distributors of overseas firms. Technical introductions on construction and properties, and on operating principles, design, and applications.

JONES, E. H.

160

Principles of radio & electronics. Cleaver-Hume P, in association with Macmillan, 1963. ix, 338p, tables, diagrs. 45s.

B Basic textbook for students taking Part A of the graduate examination of the British Institution of Radio Engineers.

SCROGGIE, M. G.

161

Essays in electronics: some further thoughts by 'Cathode Ray'. Iliffe, 1963. 7, 301p, diagrs. 42s.

A Collection of twenty-two essays originally published in the *Wireless World*, covering the application of elementary electrical theory to radio reception and sound reproduction, that might be of interest to amateur enthusiasts with some practical experience but little theoretical background.

621.7 Workshop PracticeISSERLIS, G. *ed.*

162

Automation in metal finishing. Based on a symposium at the Borough Polytechnic, London. Columbine P, 1963. x, 147p, illus, diagrs. 30s.

A Based on a symposium, this book constitutes a useful source of reference for information on theoretical and practical aspects of automatic control in mechanical polishing, and electroplating. Individual papers review polishing and plating plant, power rectification equipment, instrumentation, and testing of electro-deposited layers.

621.9 Machine Tools

WALKER, W. F.

163

Engineering productivity. Vol. 1, tools, machines, and processes. Crosby Lockwood, 1963. vi, 257p, tables, diagrs. 27s 6d.

B Comprehensive and up-to-date guide to the functions and operation of metal-cutting machine tools, suitable for undergraduate and equivalent engineering students. Includes information on the economics of tooling, and on the organization of a tool design department.

• 625 *Railway and Highway Engineering*

OGLESBY, C. H. and HEWES, L. I. 164
 Highway engineering. 2nd ed. NY, Wiley, 1963. viii,783p. \$10.95.

B-C New edition reflects the changes that have taken place over the last nine years in highway knowledge. Urban land use, transportation planning, photogrammetry, the use of computers, and other recent developments on highway location, engineering design, and construction practices are taken into consideration.

628 *Public Health Engineering*

GREAT BRITAIN. Committee on the Problem of Noise. 165
 Noise: final report presented to Parliament by the Lord President of the Council and Minister for Science. . . . HMSO, 1963. xii,235p, tables, diagrs. 13s. *Cmd. 2056*.

B Comprehensive survey of the nature and effect of noise in modern society, based on the evidence of a large number of experts and interested parties. The cause, degree of annoyance or damage, and the legal position of all common sources of noise are examined. Detailed evidence is given in the extensive appendices, particularly on aircraft and motor-vehicle noise. Easily read by the interested lay person.

TWORT, A. C. 166

Textbook of water supply. Arnold, 1963. xv,422p, illus, tables, diagrs. 65s.

B-C Comprehensive survey of those aspects of water supply which are of particular concern to the water engineer. Suitable for students sitting for examinations on water supply, but also includes some more advanced material.

63 *Agriculture. Forestry. Livestock. Fisheries*

BARGER, E. L. and others 167

Tractors and their power units. NY, London, Wiley, 1963. xvii,524p, illus. 5 gns. *Ferguson Foundation Agricultural Engineering series*.

E Comprehensive and well-illustrated textbook for the professional agricultural engineering student which contains chapters on all aspects from the combustion engine, fuels, ignition, and so on, to tests, performance, and cost estimating.

MINISTRY OF AGRICULTURE, FISHERIES, AND FOOD 168

Fruit tree raising: rootstocks and propagation. 4th ed. HMSO, 1963. vi,52p, illus. 7s. *Ministry of Agriculture, Fisheries, and Food, bulletin no. 135*.

A Up-to-date edition of a bulletin which includes information based on the work of the fruit research stations on the classification and propagation of rootstocks.

WORDERN, A. N. and others 169

Animal health, production, and pasture. Longmans, 1963. xii,786p, illus. 60s.

B Account of the new methods used in intensive grassland production, the hazards to animal health involved by their use, and methods of control for the nutritive and parasitic diseases concerned.

65 *Business Techniques. Management*

CASE INSTITUTE OF TECHNOLOGY. Operations Research Group 170

Comprehensive bibliography on operations research, 1957-1958. NY, Wiley, 1963. xiv,403p. 66s.

D An extension of the previous volume which covered the years to 1957, this bibliography gives 5,500 references to world literature. The major OR journals are covered in entirety. Entries are alphabetical, and are provided with a ten-digit classification, giving information on content, which is the basis of the subject indices.

TAMPKINS, J. A. and TRODDEN, J. 171

Production mathematics. Cleaver-Hume, in association with Macmillan, 1963. viii,168p, tables, diagrs. 25s.

B Useful for students, engineering designers, and draughtsmen covering the mathematics of mechanical engineering tools and structures in relation to production methods. Worked examples and problems for solution. Recommended.

66 Chemical Technology

DENNIS, W. H.

172

Hundred years of metallurgy. Duckworth, 1963. ix,342p, diagsr, tables, bibliog. 35s.

A The period covered is from 1850 to 1950 and division is by topic chapters: ore dressing, pyrometallurgy, ferrous, non-ferrous, and the newer metals and precious metals, metal-working, and metallography. This is a book of general interest at a high technical level.

ELMER, T. H.

173

German-English dictionary of glass, ceramics, and allied sciences. NY, London, Interscience, 1963. viii,304p, refs. 115s. *Interscience library of ceramics*.

D Compiled by a translator to provide a key to German terminology in the subject. Gives alternative word or phrase translations into English, but no grammatical information for the German words.

67/68 Manufactures

HEARLE, J. W. S. and PETERS, R. H. eds

174

Fibre structure. Butterworths, 1963. xxv,667p, illus. 6 gns.

B Authoritative text on natural and synthetic fibres, supported by substantial lists of references. Covers chemical structure, fine structure, crystallization, surface structure, with detailed studies of particular fibre types. Concludes with discussion of relationship between structure, properties, and uses of fibres.

681 Precision Mechanisms

SCHULTZ, L.

175

Digital processing: a system orientation. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xii,403p, illus, tables, diagsr, refs. 72s. *Prentice-Hall applied mathematics series*.

B Useful general description of digital computation. Begins with basic numerical operations and an historical introduction to the modern computer. Detailed requirements of a computer system are discussed in terms of selection, manipulation, and communication followed by a description of programming techniques and systems.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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with annotations

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VOL. 29

NO. 4

APRIL 1964

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Aslib Book List

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33 Economics

MANNERS, G. 176

Geography of energy. Hutchinson, 1964. 205p, tables, diagrs, maps. 15s.
Hutchinson university library.

B-A Deals with the geographical relationship arising from the location, size, and nature of the world's energy resources and the distribution of world energy consumption. While touching on questions of economic development, the main questions discussed are the economics of transport, nature of the market, and the political factors bearing on productivity and demand. A very readable book of excellent intermediate standard, suitable also for the general reader.

5 MATHEMATICS AND NATURAL SCIENCES

SCHOFIELD, R. E. 177

Lunar Society of Birmingham: a social history of provincial science and industry in eighteenth-century England. Oxford, Clarendon P, 1963. xi,491p, plates, bibliog. 70s.

B Schofield's study is the only comprehensive and documented account of a small but important scientific society which exerted considerable influence on the Industrial Revolution. Contains a useful bibliography.

52 Astronomy. Surveying. Geodesy

HOSKIN, M. A. 178

William Herschel and the construction of the heavens. With astrophysical notes by Dr D. W. Dewhirst. Oldbourne P, 1963. 199p, plates, tables, diagrs. 35s.

B Development and fluctuation of Herschel's ideas about the motions and distribution of stars and nebulae are traced by giving copious extracts from his own writings with illuminating critical comments on them. A very useful and well-documented account of the theories of this great astronomer.

MUIRDEN, J. 179

Pan book of astronomy. Pan Books, 1964. xiv,318p, plates, diagrs, tables. 5s.

A Comprehensive, very modern account of astronomy, stressing the sensational aspects of the subject. It includes radio-astronomy and its influence on our ideas about the origin of the universe. It is written mainly for the would-be amateur observer.

53 Physics

MCLEOD, E. B. 180

Introduction to fluid dynamics. Oxford, NY, [etc], Pergamon P, 1963. xii, 232p, diagrs, refs. 2 gns. *International series of monographs on pure and applied mathematics, vol. 40.*

B Very useful vectorial treatment of the flow of non-viscous compressible and incompressible fluids, suitable for physics and engineering students, but value of the work marred by innumerable misprints.

NOZIERES, P. 181

Theory of interacting Fermi systems. Tr. by D. Hone. NY, Amsterdam, Benjamin, 1964. x,370p, diagrs, refs. \$13.50. *Frontiers in physics series.*

C Useful account of the theory of Fermi liquids, including superfluids, which applies to nuclear matter, to He³, and to electrons in solids. Field theoretical perturbation methods, including Green's functions, are used throughout most of the work. These methods are described in detail, but the book is difficult for anyone unacquainted with the many-body problem.

ROBSON, J. D. 182

Introduction to random vibration. Edinburgh, Edinburgh UP, 1963 (ie, Jan 1964). viii,150p, diagrs, bibliog. 40s.

C Analytical approach to statistics of random vibration and application to engineering

problems. Based on a series of lectures as an introduction to more advanced texts given in references. Suitable for practising engineers and advanced students.

WEISS, R. J. 183

Solid state physics for metallurgists. Oxford, NY, [etc], Pergamon P, 1963. xiii,410p, illus, tables, diagrs. 4 gns.

B Useful account of various types of experimental methods of examining the atomic and electronic structures of metals and alloys. A theoretical introduction is provided but is probably too summary for most metallurgical undergraduates or graduates without some background in atomic physics.

54 Chemistry

184

ADVANCES in physical organic chemistry, ed. by V. Gold; vol. 1. NY, London, Academic P, 1964. xii,288p, tables, diagrs, refs. 3 gns.

C Four highly authoritative, fully documented articles, of value especially in advanced teaching and research. They deal with the application of isotopes to the study of reaction mechanisms, the use of deuterium and of tritium in the study of aromatic substitution, the use of volumes of activation and the effect of high pressure on reaction mechanisms, and with the reactions of hot tritium and of hot carbon atoms.

LEICESTER, H. M. *ed.*

185

Chymia: annual studies in the history of chemistry. Vol. 8. Ed. by H. M. Leicester and others. Philadelphia, Univ. of Pennsylvania P; London, OUP, 1962 [i.e. Dec. 1963]. 185p, illus, tables, diagrs. 40s.

C An annual devoted to original research in the history of chemistry. Vol. 8 contains ten papers on a variety of subjects ranging from Chemistry in Medieval Arabia and Ancient Argentina to topics in eighteenth-century chemistry.

MCLAFFERTY, F. W.

186

Mass spectral correlations. Washington, American Chemical Society, 1963. v,117p, tables. *Advances in chemistry series, no. 40*. Paperback.

C-D Extensive collection of data, tabulated in terms of m/e, which is invaluable in determining the structure of organic compounds from mass-spectroscopic observations. Formulae of ions responsible for each value of m/e given, with structural significance, are catalogued for some 4,000 compounds.

PLESCH, P. H. *ed.*

187

Chemistry of cationic polymerization. Oxford, NY, [etc], Pergamon P, 1963. xv,728p, tables, diagrs, refs. 200s. *Symposium publications*.

C Eighteen authors from university and industrial laboratories are responsible for seven general articles dealing with carbonium ions, their reactions, a comparative treatment of the characteristics of cationic polymerizations, cationic graft polymerizations, copolymerizations, radiation initiated polymerizations, and with experimental techniques. Eleven articles describe the cationic polymerization of particular classes of monomers. Documented to 1960-1. For research workers.

SZYMSKI, H. A. *ed.*

188

Infrared band handbook. NY, Plenum P, 1963. vii,484p, tables. \$35.

D Useful reference work in which 8,500 positions of infrared absorption bands of organic and inorganic compounds are listed in order of their wave numbers. These entries contain also information as available on the band intensity, the physical state of the sample, the nature of the prism on grating, the structural group of the vibration and to the source of the information. There are several indices with a comprehensive system of cross-indexing. Selected correlation tables are included. Annual supplements will be issued.

548 Crystallography

GUINIER, A.

189

X-ray diffraction in crystals, imperfect crystals, and amorphous bodies. Tr. by P. Lorrain and D. S-M. Lorrain, from the 2nd French ed., 1956. San Francisco, London, Freeman, 1963. x,378p, illus, tables, diagrs, refs. 78s.

C Revised version of the last part of the author's massive standard work in French on the same subject, published 1956. Deals mainly with diffraction by imperfect crystals and amorphous bodies, subjects not hitherto treated so extensively in English. Especially useful for solid state physicists, metallurgists, and biologists, but it does require readiness to tackle the relatively high standard of mathematics used.

55 Geology. Meteorology

- KIBEL, I. A. 190
Introduction to the hydrodynamical methods of short period weather forecasting. Tr. edited by R. Baker. Oxford, NY, [etc], Pergamon P, 1963. xiii, 383p, diagrs, maps. 100s.

C Based on a series of lectures delivered by the author in Moscow in 1956. From an official translation by the Air Ministry Translation Section.

- MALAN, D. J. 191
Physics of lightning. EUP, 1963. xv, 176p, illus, diagrs, refs. 25s. *Applied physics guides*.

A-B Comprehensive study of effects and experimental techniques which will be of use not only to the expert and the student in this field, but also to experts in many other fields, particularly electrical and telecommunications engineering, architecture, and civil engineering.

- SCHWARZBACH, M. 192
Climates of the past: an introduction to paleoclimatology. London, Van Nostrand, 1963. 328p, illus. *University series in geology*.
B Translation by R. O. Muir of *Das Klima der Vorzeit*.

- STRAHLER, A. N. 193
Earth sciences. NY, London, Harper & Row, ©1963. xii, 681p, illus, tables, diagrs, maps, refs. 75s. *Harper's geoscience series*.

B Provides an excellent overall treatment of all aspects of earth science, including astronomy, meteorology, climatology, geology, and geophysics. Basic principles are clearly explained, logically developed, and profusely illustrated. (The excellence of the diagrams is an outstanding quality of the book.) The author has included the results of much recent research work and although the book is comprehensive, it is rarely superficial.

- VON BUBNOFF, S. 194
Fundamentals of geology. Tr. from the German and ed. by W. T. Harry. O & B, 1963 [i.e. Jan. 1964]. xv, 287p, tables, maps, diagrs, refs. 2 gns.

B Clear and critical exposition and assessment of basic theories and methods applied in geology; chapters cover philosophy of the subject, basic stratigraphical laws of succession, development of the earth's physical features and their classification, as applied to Europe, and the concept of time in geology. Diagrams are numerous, clear, and well-produced. (Tr. from 3rd German ed., published Akademie Verlag, 1954.)

57 Anthropological and Biological Sciences

- FIRESOFF, V. A. 195
Life beyond the earth: a study in exobiology. Hutchinson, 1963. xvi, 320p, plates, diagrs, refs. 2 gns. *Hutchinson's scientific and technical series*.

A-B Provides a readable, provocative, and unusually wide-ranging survey question of extra-terrestrial life, beginning with the basic physico-chemical concepts and culminating in modern ideas of cosmogony, including the author's own theory, mathematics being confined to a twenty-five page appendix. The book demands no more knowledge of science than O-level GCE in General Science and contains much solid information besides speculation.

577.1 Biochemistry

- GRANT, J. K. ed. 196
Control of lipid metabolism. London, NY, Academic P, 1963. xii, 191p, plates, tables, diagrs, refs. 37s 6d. *Biochemical Society symposium, no. 24*.

C Authoritative review of some very recent work on the biosynthesis of certain lipids, and the influence of enzymes and hormones thereon.

58 Botany

- STREET, H. E. 197
Plant metabolism. Oxford, NY, [etc], Pergamon P, ©1963. ix, 238p, illus, diagrs, refs. 20s. *Commonwealth and International library of science, technology, engineering, and liberal studies*. Soft covers.

B Designed for first-year university students; providing a well-balanced and sometimes quite

advanced account of the subject from a biological viewpoint. Particularly helpful to teachers because it puts recent developments into proper perspective.

- VAN WIJK, W. R. *ed.* 198
Physics of plant environment. Amsterdam, North-Holland Publishing Co., 1963. xvi, 382p, plates, tables, diagrs, refs. 80s.

C Deals especially with water in the air and the soil, the radiation balance of the earth's surface, soil temperature (four chapters out of ten), and atmospheric turbulence. Concludes with chapters on the Glasshouse environment and atmospheric pollution. The treatment is thorough but condensed, and applications are not illustrated in detail. Useful mainly to workers already familiar with the agricultural and ecological problems to which the physics can be applied.

59 Zoology

- BEUTTNER-JANUSCH, J. *ed.* 199
Evolutionary and genetic biology of primates. Vol. 1. NY, London, Academic P, 1963. xiv, 327p, illus, tables, diagrs, refs. \$12.

C Very useful reviews by specialists on contemporary research concerning the nervous system, the skin, and the chromosomes of Primates. Problems of classification of the Primates are carefully examined in the light of recent work on fossils, biochemical genetics, cytogenetics, and modern analyses of display and manipulated behaviour.

- ZOOLOGICAL SOCIETY OF LONDON 200

The primates: proceedings of a symposium held on 12-14th April, 1962. . .
Ed. by J. Napier and N. A. Barnicot. The Society, 1963. 289p, illus, tables, diagrs, refs. 100s cloth; 90s paper. *Symposia of the Zoological Society of London*, no. 10.

C A collection of fifteen principal and eleven short contributions on the biology of primates, grouped in three sections dealing with behaviour (eleven papers), functional anatomy (seven), and genetics (eight). The contributors are specialists in the subject from seven countries. Ten of the papers report studies of specialized aspects of single species; the remainder, including all the genetical ones, are more general in scope providing reviews of greater value to the general biologist.

6 APPLIED SCIENCES

61 Health and Safety

619 Veterinary medicine

- CORNELIUS, C. E. and KANEKO, J. J. 201
Clinical biochemistry of domestic animals. NY, London, Academic P, 1963. xii, 678p, illus, diagrs, refs. 143s.

B Contains theory and figures for interpreting biochemical findings in live animals in health and disease, but not detailed laboratory methods. Invaluable for the student of veterinary medicine and useful for reference, with an author index to the many papers cited.

62 Engineering and Technology

621 Mechanical and Electrical Engineering

- WELBOURN, D. B. 202
Essentials of control theory for mechanical engineers. Arnold, 1963. xi, 199p, tables, diagrs, bibliog. 28s.

B Intended for the practising engineer. Effort is made to give a physical insight into the control problem using a minimum amount of mathematics. Most topics in the field are touched on, but little detail is given, except for specific examples.

621.3 Electrical Engineering

- CHISTYAKOV, N. I. *ed.* 203
Transistor electronics in instrument technology. Tr. by G. R. Kiss. Oxford, NY, [etc], Pergamon P, 1964. x, 378p, illus, tables, diagrs, refs. 80s.

C These seventeen chapters are reprints of papers presented at the first conference on semi-conductors held in Moscow in 1956. They indicate the state of theoretical and practical work on transistor circuits in the Soviet Union at that date. They have been well translated, but the circuits presented are based on components peculiar to the USSR.

POTTER, J. L. and FICH, S. 204
Theory of network and lines. Englewood Cliffs (NJ), Prentice-Hall, ©1963 [i.e. Jan. 1964]. x, 435p, tables, diagrs. 4 gns. *Prentice-Hall electrical engineering series*.

B Rigorous treatment of the theory required for the design and analysis of two-terminal pair networks. A good grounding in elementary circuit theory and determinants is necessary.

621.4 Internal combustion and other special engines

KHOLSHCHEVNIKOV, K. V. 205
Some problems in the theory and assessment of turbo-jet engines. Tr. by W. E. Jones, tr. edited by B. P. Mullins. Oxford, NY, [etc], Pergamon P, 1964. xiii, 133p, diagrs, refs. 35s. *International series of monographs in aeronautics and astronautics: division III, propulsion systems including fuels, vol. 4*.

B General theory of the performance of turbo-jet engines is developed with particular reference to optimum conditions of minimum specific fuel consumption. The relations between engine operating conditions and compressor and turbine performance and engine size are then considered and a general parameter controlling these relations is derived. The treatment is simple if analytic, with little engineering detail. A monograph rather than a textbook, the scope is limited, but the approach in some respects novel.

NIKOLAYEV, B. A. 206
Thermodynamic assessment of rocket engines. Tr. by W. E. Jones, tr. edited by B. P. Mullins. Oxford, NY, [etc], Pergamon P, 1963. xviii, 150p, tables, refs. 3 gns. *International series of monographs in aeronautics and astronautics, division VII: Aerodynamics*.

B Presents an approximate method for calculating the specific thrust of a rocket engine from thermodynamic data and a knowledge of operating conditions without the necessity of calculating equilibrium chemical compositions. The calculation procedure is illustrated by a number of fully worked examples and is shown to be rapid and to give acceptable accuracy. Tables of thermodynamic data and charts to aid calculations are included.

624 Structural Engineering

JUMIKIS, A. R. 207
Mechanics of soils: fundamentals for advanced study. Princeton (NJ), London, [etc], Van Nostrand, 1964. 448p, illus, 97s.

C This more advanced text is designed to follow on from the author's 'Soil Mechanics' (revd. *Aslib Book List*, Sept. 1962, 619). Deals with stress distribution theories and gives a thorough analysis of Coulomb's active and passive earth pressure theory for both cohesive and non-cohesive soils.

629.1 Transport Engineering

MCDONALD, R. 208
Marine air conditioning: practical applications. Newnes, 1964. xi, 220p, tables, diagrs, bibliog. 45s. *Newnes marine engineering series*.

B Air conditioning on a large scale has been applied to ships only in recent years; as a result there is little recorded information on the subject. This book goes far to fill the gap.

65 Business Techniques. Management

AVONDO-BODINO, G. 209
Economic applications of the theory of graphs. Blackie, [1964]. xi, 111p, tables, diagrs, refs. 32s 6d. *Tracts on mathematics and its applications, vol. 1*.

C Topological techniques used to solve some problems commonly encountered in business, including problems of optimum transport procedure, optimum personnel assignments, and input-output models. Modern techniques of economic analysis can solve problems involving several variables, and the author provides a concise (though difficult) account of some of these techniques and their applications.

- BERENSON, C. *ed.* 210
Administration of the chemical enterprise. NY, London, Interscience, 1963. x,414p, tables, bibliog. 87s.

C Compiled by a panel of experts drawn from industries, management consultants, and the universities, and edited by the Assistant Professor of Business Administration at the City University of New York, this excellent American book provides an authoritative and comprehensive treatise on all aspects of management in the chemical industry.

- FLETCHER, A. *and* CLARKE, G. 211
Management and mathematics: the practical techniques available. London, Business Publications, 1964. xi,235p, 55s.

A Simple introduction to some operational research techniques, including linear and dynamic programming, networks, PERT, games theory, etc. Little mathematical knowledge is assumed in the reader. A useful and valuable book both for business executives and for younger OR workers.

66 Chemical Technology

- AMERICAN CERAMIC SOCIETY 212

Advances in glass technology: technical papers of the VI International Congress on glass, Washington, DC, USA, July 8-14, 1962. Part 2. Ed. by F. R. Matson and G. E. Rindone. NY, Plenum P, 1963. xvii,410p, illus, tables, diags, refs. \$15. [Part 1 reviewed vol. 27, no. 843.]

C First section contains texts of five technical papers not received in time to be published in Part 1, plus discussion, comments, or additions made by the respective authors to contributions which did appear in Part 1. The remaining papers deal with the artistic and historical aspects of glassmaking. Papers are printed in the language in which they were presented, i.e., English, French, or German. In all there are 108 contributions, forming an essential complement to the papers of the main technical sections of the Congress given in Part 1.

- BAUMGARTNER, J. M. 213

Canned foods: an introduction to their microbiology. 5th ed, rev. by A. C. Hersom and E. D. Hulland. Churchill, 1963. viii,291p, illus, tables, diags, refs. 30s.

B Directed to the food technologist who is not a microbiologist, essential information is given on the organisms responsible for food spoilage, the principles of preservation by canning, and methods of laboratory control.

- BURKE, J. E. 214

Progress in ceramic science, vol. 3. Oxford, NY, [etc], Pergamon P, 1963. 262p, illus. 80s.

C Review of current knowledge in sintering, electric conduction, and dielectric relaxation in glass, Griffith crack theory of glass strength and crystallographic aspects of some decomposition and recrystallization reactions.

669 Metallurgy

- BELLAMY, R. G. *and* HILL, N. A. 215

Extraction and metallurgy of uranium, thorium, and beryllium. Oxford, NY, [etc], Pergamon P, 1963. ix,198p, tables, diags, refs. 2 *gns.* *International series of monographs on nuclear energy: Division VIII, materials. Vol. 1.*

B Contains information concerning the extractive metallurgy, by low and high temperature routes, fabrication and powder metallurgy, and properties of these elements. Also includes phase diagrams of the most important binary alloys of the metals and a short section on health hazards involved in their use and manipulation. Suitable as a modern guide to the whole of the metallurgical aspects of the applications of the metals in the nuclear industry.

- EREMENKO, V. N. *ed.* 216

Role of surface phenomena in metallurgy. Tr. from the Russian. NY, Consultants Bureau, ©1963. 141p, illus, tables, diags, refs. \$27.50. Paperback.

C Papers mainly experimental, and first class, with some imaginative application to technology. They deal mainly with determination of the surface energies of liquid metals. Contains probably the largest amount of experimental work in this field ever published. No determinations of the surface energies of solids. Theoretical papers less inspiring than the practical ones.

67/68 Manufactures

ALEXANDER, P. and HUDSON, R. F. 217
Wool, its chemistry and physics. 2nd ed. edited by C. Earland. C & H, 1963. 417p, illus, diags. 75s.

B-C First published in 1954, this new edition contains much new and well-presented material.

PETUKHOV, B. V. 218
Technology of polyester fibres. Tr. by M. F. Mullins, tr. ed. by B. P. Mullins. Oxford, NY, [etc], Pergamon P, 1963. xiv, 89p, illus, diags, tables, refs. 30s.

C Very clearly written monograph giving many details of polyester fibre manufacture which have heretofore only been available in the files of the manufacturers. Also provides data on the properties of the material.

TRCTMAN, E. R. 219
Dyeing and chemical technology of textile fibres. 3rd ed. Griffin, 1964. xii, 639p, illus, diags. 120s.

B Practical guide to the chemistry and technology of fibres and chemical finishing processes, particularly dyeing. New edition contains details of recent and up-to-date processes.

WOOD, A. D. 220
Plywoods of the world: their development, manufacture, and application. 3rd rev. ed. Edinburgh, Johnston & Bacon, 1963. xiv, 489p, illus. 3 gns.

E Comprehensive and authoritative work, covering history, properties, manufacture, grading, etc., of plywoods, laminated boards, block boards, etc., their many applications, and the plywood trade. First published 1942.

681 Precision Mechanisms

BRAUN, E. L. 221
Digital computer design: logic, circuitry, and synthesis. NY, London, Academic P, 1963. xiii, 606p, tables, diags, bibliog. 118s.

C Introductory treatment on general-purpose digital computers and digital differential analysers, concerned more with how they work than how they are used. Boolean algebra, sequential switching circuits, storage of information, performance of arithmetic operations, etc., are described, and the techniques given include up-to-date ones. Extensive lists of references up to 1962.

RANDELL, B. and RUSSELL, L. J. 222
Algol 60 implementation: the translation and use of Algol 60 programs on a computer. London, NY, Academic P for the Automatic Programming Information Centre, 1964. xiv, 418p, tables, diags, refs. 4 gns. *APIC studies in data processing, no. 5.*

C Detailed account of the Whetstone Compiler devised for programming the English Electric Co. KDF9 computer in terms of the international Algol 60 language; also gives the flow diagrams applicable to other computers. Chiefly for designers of programming systems and of computers. A very specialized study of the subject, highly rated.

69 Building Industry

AQUA GROUP 223
Pre-contract practice for architects and quantity surveyors. 2nd ed., rev. and enlarged. Crosby Lockwood, 1964. x, 81p, illus, tables. 15s.

B Comprehensively written by a young but experienced group of architects and quantity surveyors. Excellent: chapter on approximate estimates, cost-planning, and cost-control for better client-architect-quantity surveyor relationships. Other chapters cover drawing co-ordination, effective use of schedules, combination of specification and bill of quantities, sub-contractors, and tendering. Up to date and useful for practitioner and student.

GEEDES, S. and CHRYSTAL-SMITH, G. 224
Estimating for building and civil engineering works. Rev. by G. Chrystal-Smith. 3rd ed. Newnes, 1963. x, 472p, tables. 3 gns.

B Systematic dissection of the building process from every aspect: plant, labour, and material costs, and the factors that influence their variation; with detailed estimating data, for the costing of all types of work in each trade, with revised labour and material costs in light of present-day conditions.

NEVILLE, A. M. 225

Properties of concrete. Pitman, 1963. xi, 532p, tables, diags, refs. 55s.

C Covers properties of cements and aggregates, properties of fresh and hardened concrete—including a section on testing—and mix design. A useful list of references is included at the end of each chapter. Probably more useful to the research worker than to the practising engineer.

SHAW, E. W. 226

Heating and hot-water services: selected subjects with worked examples. Crosby Lockwood, 1963. x, 210p, tables, diags. 30s.

B Basic text for practising engineers and students. Description is minimized, the emphasis being on the calculations basic to the determination of the heating requirements of buildings, and the appropriate dimensions of hot-water systems.

WHITE, G. 227

Brickwork. Ill. by A. L. Moseley. Cleaver-Hume P, 1963. 121p, illus, diags. 9s 6d. *Building craft certificate series.*

A The work of two Technical College lecturers, one of whom has written the text and the other produced the illustrations. Treatment is not sufficiently comprehensive for the book to be used as a class textbook but, as a supplement to class teaching, it should help to widen the interest of the apprentice bricklayer beyond the craft itself.

7 THE ARTS

71 Physical planning

OSBORN, Sir F. J. and WHITTICK, A. 228

The new towns: the answer to megalopolis. Leonard Hill, 1963. xvii, 376p, illus, plates, plans, bibliog. 3 gns.

B Britain's New Towns Movement, its successes and failures, underlying principles, and the role of their administration. The development of nineteen detailed examples is traced with emphasis placed more on the conditioning of developments spatially than on coercive planning.

BURNS, W. 229

New towns for old: the technique of urban renewal. Leonard Hill, 1963. xii, 226p, illus, plates, tables, plans, bibliog. 2 gns.

B-C The author passes on his wide and accumulated experience in redevelopment for the benefit of those faced with similar difficulties. Of special note are the methods of estimating redevelopment needs, the machinery of execution covering legal procedures, programming, team structure; relationships with the public, and assessments of the future of redevelopment, design, and implementation trends.

72 Architecture

DANBY, M. 230

Grammar of architectural design, with special reference to the tropics. OUP, 1963. xvi, 243p, illus, tables, diags, maps. 50s.

A-B Especially for students who intend to practise in the tropics, an excellent introduction to architecture as a profession, and the basic factors on which the creative process depends. Covers basic considerations of space, colour, texture, pattern, proportion, scale, perception, climate, social conditions, and economics.

77 Photography

WALLACE, C. 231

Photography. Evans, 1963. 184p, illus, tables, diags. 18s.

A For newcomers and the experienced, covering camera, film, and printing material choice; determination of exposure in relation to film speeds, apertures, shutter speeds, and flashlights; composition principles; film processing; prints and their finishing; all concluded with a very useful set of tables.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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ASLIB BOOK LIST

VOL. 29

NO. 5

MAY 1964

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- b* where they are unable to examine copies of new books before ordering;
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- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

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3 SOCIAL SCIENCES

37 Education

- SNOW, C. P. 232
Two cultures: and a second look. An expanded version of Two cultures and the scientific revolution. CUP, 1964. 107p. 10s 6d.
A Snow's original pamphlet dealt with the split between the literary and scientific cultures as a matter of great urgency for the nation and for the West. In his 'second look', now attached to the original tract, he deals with some of his critics and clarifies some points.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- DODD, K. N. 233
Mathematics in aeronautical research. OUP, 1964. xiii, 130p, plates, tables, diags. 1gn. *Oxford mathematical handbooks*.
B Ten practical problems are discussed, their mathematical formulation derived, and a method of arriving at numerical solutions (often with a computer program given) is worked out. Clearly and simply written, with an excellent chapter on the working of digital computers, and containing much material not available elsewhere.
- FADDEEV, D. K. and FADDEEVA, V. N. 234
Computational methods of linear algebra. Tr. [from the Russian] by R. C. Williams. San Francisco, London, Freeman, 1963 [i.e. Jan. 1964]. xi, 621p, tables, diags, refs. 82s. *Series of undergraduate books in mathematics*.
C First-rate advanced text dealing with the techniques of numerical analysis required in linear algebra and matrix theory. Many examples are given, and a comprehensive bibliography is included. First published, Moscow, 1960.
- NOBLE, B. 235
Numerical methods: 1, iteration, programming, and algebraic equations. Edinburgh, London, O & B; NY, Interscience, 1964. xii, 156p, tables, diags. 10s 6d. *University mathematical texts*.
E Most valuable introduction to numerical methods at the undergraduate level. Besides an introduction to elementary programming for automatic computers, it contains useful chapters on linear equations, matrix methods, and eigenvalue-eigenvector problems.
- PETERS, J. 236
Eight-place tables of trigonometric functions for every second of the arc. With an appendix on the computation to twenty places. Bronx, NY, Chelsea Publishing Co., 1963. xi, 954p.
D Inevitably a large volume, in which sine, tangent, cotangent, and cosine values are tabulated in adjacent columns, each page containing values over a range of three minutes of arc at one-second intervals. The tables are extremely easily read, and although the first three digits are only listed at the top and bottom of each column, adequate precaution has been taken to prevent the user making an error when the top and bottom digits are different.
- SACKS, G. E. 237
Degrees of unsolvability. Princeton (NJ), Princeton UP, 1963 [i.e. Jan. 1964]. ix, 174p, bibliog. 28s. *Annals of mathematics studies*, no. 55.
C Concerned with current research in mathematical aspects of mathematical logic. Within the domain of recursive functions there may be distinguished various sub-domains, corresponding to various degrees of recursiveness, that is, to simplicity of computation. The word 'simplicity' here is used in a technical sense. Essentially a research monograph.

52 Astronomy. Surveying. Geodesy

WHIPPLE, F. L.

238

Earth, moon, and planets. Rev. ed. Cambridge, Mass., Harvard UP; London, OUP, 1963 [i.e. March 1964]. viii, 278p, illus, tables, diagrs. 52s.

A Written for the general reader by an eminent American astronomer, provides an up-to-date account of modern planetary astronomy, including a brief survey of geophysics and the problem of the origin and evolution of the solar system.

53 Physics

CHIU, H-Y. and HOFFMANN, W. F. eds.

239

Gravitation and relativity. NY, Amsterdam, Benjamin, 1964. xxxv, 353p, tables, diagrs, refs. \$15.75. *Physical investigations of the universe series.*

C Collection of authoritative articles on gravitation in the light of present-day experimental and theoretical research. A topical volume, well presented and very readable. In spite of its advanced nature, should appeal to a wide range of physicists who are not necessarily involved in work on gravitation or the theory of relativity, and should offer an excellent opportunity to get more acquainted with the subject.

MCCLELLAN, A. L.

240

Tables of experimental dipole moments. San Francisco, London, Freeman, 1963. [i.e. Jan. 1964]. 713p, tables, bibliog. 100s.

D Compilation of the results of published work to 1961, with values and conditions of study for about 6,000 inorganic, organic, and organometallic compounds. Bibliography of 2,178 references. Excellent sourcebook for libraries and those interested in molecular structure.

ROSE-INNES, A. C.

241

Low temperature techniques: the use of liquid helium in the laboratory. EUP, 1964. xiii, 162p, plate, tables, diagrs, refs. 25s. *Applied physics guides.*

B Concise, well-written description of all the techniques needed by the novice research worker in the liquid helium field. What this book does not cover will be found in the numerous literature references cited.

RSCHEVKIN, S. N.

242

Course of lectures on the theory of sound. Tr. from the Russian by O. M. Blunn, ed. by P. E. Doak. Oxford, NY, [etc], Pergamon, P, 1963. xv, 464p, tables, diagrs. 4 gns.

C Though in advance of the needs of an honours physics undergraduate, this book provides an excellent introduction to many present-day problems of the acoustics engineer or technologist. Distinguishing features are chapters on 'the non-uniform spherical radiator', 'theory of acoustic filters', and 'scattering of sound'.

STEWARTSON, K.

243

Theory of laminar boundary layers in compressible fluids. Oxford, Clarendon P, 1964. x, 191p, illus, tables, diagrs, refs. 3 gns. *Oxford mathematical monographs.* Paperback.

C Authoritative and careful account of those aspects of the title subject which can be treated by mathematical (as opposed to empirical) methods, with ample reference to observed flows and physical interpretation.

537 Electricity

KUZNETSOV, P. I. and STRATONOVICH, R. L.

244

Propagation of electromagnetic waves in multiconductor transmission lines. Tr. by R. F. Kelleher, tr. edited by L. A. G. Dresel. Oxford, NY, [etc], Pergamon P, 1964. xvi, 190p, tables, refs. 70s.

C Based on a series of articles published in Russian journals during a period of eight years, and dealing largely with theoretical investigations. Propagation is examined from the viewpoints of Maxwell's and Kirchoff's equations and the results then applied to a number of problems. An excellent work for the specialist. First published Moscow 1958.

54 Chemistry

AMERICAN CHEMICAL SOCIETY

245

Contact angle, wettability, and adhesion: the Kendall Award Symposium sponsored by the Division of Colloid and Surface Chemistry at the 144th meeting of the American Chemical Society, Los Angeles, California, April 2-3, 1963. ix, 389p, illus, tables, diagrs, refs. \$8.00. *Advances in chemistry series, no. 43.*

C Twenty-six papers by some of the leading authorities in surface chemistry give a fascinating account of current research on problems associated with contact angles, wettability, and adhesion as well as a comprehensive review of earlier work in the field.

CASE INSTITUTE OF TECHNOLOGY

246

Programmed supplements for general chemistry. Ed. by G. M. Barrow and others. 2 vols. NY, Amsterdam, Benjamin, 1963. 247p; 283p, tables, diagrs. \$4.35; \$3.95.

B Logically organized system of questions on general chemistry (with answers) designed to assist the students' assimilation of a parallel lecture course on chemical principles. Suitable for a first (intermediate) course only.

EVANS, R. C.

247

Introduction to crystal chemistry. 2nd ed. CUP, 1964. xii, 410p, tables, diagrs, bibliog. 52s 6d.

B Completely rewritten and slightly enlarged edition of a well-known textbook. Without assuming a knowledge of crystallography, it admirably succeeds in giving both a survey of the principles governing crystal architecture and an introduction to systematic crystal chemistry. Comprehensive, up to date, lucid, and well illustrated. (First ed. 1939.)

248

GAS chromatography: fourth international symposium held under the auspices of the Analysis Instrumentation Division of the Instrument Society of America, June 17-21, 1963. Ed. by L. Fowler. NY, London, Academic P, ©1963. xiv, 270p, tables, diagrs, refs. 4 gns.

C Sixteen papers by authors from US industrial and university laboratories, of which six review progress in selected fields of theory, technique, and application, while others are briefer research reports on a limited subject, mainly relating to a technique or application. The papers are documented and followed by discussion. For analytical chemists and those concerned with the use of gas chromatography.

LAMBIE, D. A.

249

Techniques for the use of radioisotopes in analysis: a laboratory manual. Spon, 1964. vi, 135p, tables, diagrs. 40s. *Spon's general and industrial chemistry series.*

B Useful elementary instruction manual for analysts not yet acquainted with radiochemical methods. Detailed instructions are given so that reliable results should be obtainable without great difficulty.

57 Anthropological and Biological Sciences

HAYES, W.

250

Genetics of bacteria and their viruses: studies in basic genetics and molecular biology. Oxford, Blackwell Scientific Publications, 1964. xii, 740p, plates, tables, diagrs, refs. 4 gns.

C Excellent, well written, and integrated treatment of the genetic systems and the basis of heredity at the molecular level. The nature of mutation and the genetic code are but two of the many aspects considered within the framework of the book. For microbiologists and biochemists.

MACAN, T. T.

251

Freshwater ecology. Longmans, 1963. x, 338p, tables, maps, refs. 35s.

B Ecology of freshwater organisms is treated in the light of modern concepts. Environmental factors controlling populations and community composition are discussed and surveyed. A much-needed book written by an authority in the field.

577.1 Biochemistry

JEVONS, F. R.

252

Biochemical approach to life. A & U, 1964. 184p, tables, diagrs. 28s.

A Stimulating and attractive presentation of biochemical science to the general reader, essentially from a modern biological point of view. Lucid and concise, with a skilful selection and presentation of material.

58 Botany

GREIG-SMITH, P.

253

Quantitative plant ecology. 2nd ed. Butterworths, 1964. xii,256p, tables, diagrs, refs. 45s.

B Comprehensive and critical survey of the application of statistics to plant ecology and sociology, taking full account of advances since the first edition appeared. Assuming only an elementary knowledge of statistics, it explains the more widely used methods with worked examples. Of particular interest is the discussion of the statistical approach to ordination and classification of plant communities.

WATSON, E. V.

254

Structure and life of bryophytes. Hutchinson, 1964. 192p, illus, tables, bibliog. 15s. *Hutchinson university library.*

B Series of essays on bryological topics successfully combining recent discoveries with a background of older established facts. Should do much to stimulate renewed interest in this often neglected group of plants amongst students and teachers of botany.

59 ZoologySOUTHERN, H. N. *ed.*

255

Handbook of British mammals. Oxford, Blackwell Scientific Publications, 1964. xxi,465p, plates, illus, bibliog. 37s 6d.

A-D Comprehensive reference book written by members of the Mammal Society of the British Isles. Covers the general biology of mammals and presents a systematic account of each order.

YATARO TAZIMA

256

Genetics of the silkworm. Logos P, in association with Elek Books, distrib. by Academic P, 1964. xii,253p, plate, tables, diagrs, bibliog. 50s.

C Comprehensive review of silkworm genetics, particularly valuable in that much of the original material is unavailable in English. Developmental and biochemical genetics, genetic control of hormones, maternal inheritance, and radiation mutagenesis are discussed.

6 APPLIED SCIENCES**61 Health and Safety****615 Pharmacy**

GARRATT, D. C.

257

Quantitative analysis of drugs. 3rd edition. D. C. Garratt, assisted by L. Brealey, C. A. Johnson, K. L. Smith, and G. Sykes. C & H, 1964. xiii,925p, tables, diagrs, refs. 6 gns.

B-C Recent rapid advances in pharmaceutical analysis have made this new edition necessary. Includes the latest trends in analytical techniques, and covers the qualitative methods, with criticisms, for drugs, and their pharmaceutical preparations. In the main, no attempt is made to include the theories or reactions underlying the methods.

62 Engineering and Technology

HOLLAND, L.

258

Properties of glass surfaces. C & H, 1964. xvi,546p, plates, tables, diagrs, refs. 80s.

C Summarizes information, available previously only in isolated scientific papers, on both physical and chemical properties of glass surfaces which are of interest to engineers and others who 'use' glass surfaces. Includes the author's own data drawn from a wide experience with the deposition of thin films on glass surfaces.

621 Mechanical and Electrical Engineering**621.3 Electrical Engineering**

DUMMER, G. W. A.

259

Fixed capacitors. 2nd ed. Pitman, 1964. xi, 270p, illus, tables, diagrs, bibliog. 45s. *Radio and electronic components, vol. 3.*

B Revised edition of a standard work on capacitors, written to help the designer of radio and electronic equipment to choose the most suitable components for his purpose.

EDWIN, G. and RODDAM, T.

260

Principles of feedback design. Iliffe Books, for *Wireless World*, 1964. 7, 238p, tables, diagrs. 45s.

B Bridges the gap between elementary and advanced treatises. Deals with feedback in electronic engineering and demands a knowledge of algebra. Should prove particularly useful to the design engineer.

RATNER, B. S.

261

Accelerators of charged particles. Tr. by L. A. Fenn, tr. edited by H. W. Curtis. Oxford, NY, [etc], Pergamon P, 1964. viii, 120p, illus, tables, diagrs, refs. 17s 6d.

A-B Simple account of elementary radioactivity and nuclear physics at sixth-form level, followed by a rather fuller description of accelerating machines. The acceleration mechanisms are explained quite well, but the brief accounts of researches carried out with them are not very easy to follow.

RODDAM, T.

262

Transistor amplifiers for audio frequencies: principles of design. Iliffe, for *Wireless World*, 1964. 7, 256p, tables, diagrs. 45s.

B Design textbook which includes practical examples written with the minimum of mathematics, for engineers and advanced amateurs. Covers basic parameters of transistors which affect design and chapters on all aspects of amplification.

STIGANT, S. A.

263

Matrix and tensor analysis in electrical network theory. Macdonald, 1964. xii, 505p, tables, diagrs, refs. 80s.

B Authoritative work giving working principles of the analyses set down in detail. The theme is the application of these principles to the study of the performance of practical stationary electrical networks.

264

USSR direct current research: reports of the Leningrad Direct Current Research Institute. Tr. from the Russian by L. A. Fenn. Oxford, NY, [etc], Pergamon P, 1964. 287p, illus, tables, diagrs. 100s.

C Collection under one cover of papers mainly of interest to power engineers with a strong bias towards high-voltage direct-current transmission. Some of these translated papers have already appeared elsewhere. (First published Moscow 1957.)

621.7 Workshop Practice

GLANVILL, A. B. and DENTON, E. N.

265

Injection-mould design fundamentals. Vol 1, general principles; vol. 2, tool construction. Machinery Publishing Co., ©1963. 155p; 147p, illus, tables, diagrs. 20s per vol. *Machinery's standard reference series.*

B Concisely compiled and up-to-date information on design, manufacture, and operation of the various types of injection mould; for students of National Certificate Courses, practising designers, and toolmakers.

629.1 Transport Engineering

NATIONAL PHYSICAL LABORATORY

266

Sea-going qualities of ships: a seminar held at the National Physical Laboratory on 17 and 18 October, 1961. HMSO, 1963. v, 150p, illus, tables, diagrs. maps, bibliogs. 17s. 6d.

C Seven papers present the basic information on ship motion. Four deal with waves, one each with ship trials, dynamic bending moments, and model testing techniques. Intended primarily for naval architects. Includes a bibliography on sea state.

629.19 ASTRONAUTICS

GATLAND, K. W.

267

Spacecraft and boosters: the first comprehensive analysis of more than seventy US and Soviet space launchings, 1961. London, Iliffe; Los Angeles, Aero Publishers, 1964. 9,296p, illus, tables, diagrs. 85s.

A Comprehensive chronological record of all known space launchings by USA and USSR during 1961. Two sections describe payloads and launch vehicles separately. Well illustrated with half-tones and line drawings.

63 Agriculture. Forestry. Livestock. Fisheries

BRITISH INSECTICIDE AND FUNGICIDE COUNCIL

268

Insecticide and fungicide handbook for crop protection. Ed. by H. Martin. Oxford, Blackwell Scientific Publications 1963. 306p, tables. 32s 6d.

B First authoritative book dealing comprehensively with modern methods of chemical control of important pests and diseases of agricultural and horticultural crops in Britain. A more practical approach than Dr Martin's earlier Scientific principles of crop protection, for the benefit of farmers, growers, and advisory workers. No mention of proprietary names, rather details of chemical nature, methods of formulation, and rates of application of active pesticidal materials.

HILEY, W. E.

269

Forestry venture. With an appreciation by L. Chalk and foreword and chapter . . . by L. K. Elmhirst. Faber, 1964. 240p, illus, tables, refs. 2 gns.

B Well-written, well-illustrated account of thirty years management of a 2,000-acre woodland estate in South Devon. Includes detailed records of the economics and control of profitable forest crops, from 1931 to 1961.

JONES, H. A. and MANN, L. K.

270

Onions and their allies: botany, cultivation and utilization. London, Leonard Hill; NY, Interscience, 1963. xviii,203p, illus, tables bibliog. 75s.

B Concerned solely with cultivated alliums, their classification, morphology, food value, cultivation, diseases, and parasites. Suitable for research workers, growers, and seedsmen. A book of high quality, very readable, and with excellent illustrations.

KUMAR, L. S. S. and others

271

Agriculture in India. Vol. I: general; vol. II: crops. By L. S. S. Kumar, A. C. Aggarwala, H. R. Arakeri, M. G. Kamath, E. N. Moore, in collab. with R. L. Donahue. Asia Publishing House, 1963 [i.e. Feb. 1964]. xxiv,252p; xix,243p, illus, plates, tables, diagrs, refs. 2 gns per vol.

A An excellent textbook written in simple language by a team of Indian and American authors for use in Indian Multipurpose Higher Secondary Schools. Translations into Hindi and other Indian languages are being prepared.

MCILROY, R. J.

272

Introduction to tropical grassland husbandry. OUP, 1964. x,128p, tables, bibliog. 16s.

B Based on a series of lectures to undergraduates of the University of Ibadan, Nigeria, studying for the degree of B.Sc.(Agric.). Appendices by G. Jackson on 'The ecological basis of grassland husbandry' and 'Grasslands of tropical Africa'.

273

NEW APPROACHES to pest control and eradication: a symposium sponsored by the Pesticides Subdivision of the Division of Agricultural and Food Chemistry . . . of the American Chemical Society. Washington, The Society, 1963. xi,74p, tables, diagrs, refs. *Advances in chemistry series, no. 41*. Paperback.

B Topics include the use of sex attractants, chemosterilants, antifeeding compounds, and the production of insecticidal compounds by bacteria. Of particular interest since the use of pesticides has been the target of considerable criticism in recent months.

NORMAN, A. G. ed.

274

The soybean: genetics, breeding, physiology, nutrition, management. NY, London, Academic P, 1963. x,239p, tables, diagrs, refs. 48s.

C Four review articles surveying the literature of the subjects mentioned in the title. Comprehensive lists of references.

TRACY, M. 275
Agriculture in Western Europe: crisis and adaptation since 1880. Cape, 1964. 415p, tables, bibliog. 55s.

B-C Clear perspective of current agricultural problems and proposed solutions given by a well-documented comparison of 100 years' adjustment to the agriculture and trade of Britain, France, Germany, and Denmark.

VOISIN, A. 276
Grass tetany. Tr. from the French by C. T. M. Herriott. Crosby Lockwood, 1963. xiv, 262p, tables, map. 55s.

A-B Covers an immense volume of research and contains much practical advice: from disease description through mineral balances of soil, grass, and animals, metabolism, physiology, causal factors, and fertilizers, to husbandry and arable farming methods to minimize losses. Useful to students, veterinary practitioners, advisory officers, and progressive farmers.

WORDEN, A. N., SELLERS, K., and TRIBE, D. E. 277
Animal health, production, and pasture. Longmans, 1963. xii, 786p, tables, diags, refs. 60s.

B Describes the new methods used in intensification of grassland production. Examines the hazards involved by these methods on the health of the animal, and the methods of control for the various nutritive and parasitic diseases concerned.

65 Business Techniques. Management

BARRY, W. S. 278
Managing a transport business. A & U, 1963. 210p, plates, tables. 35s. *Business management in transport*.

B Interesting book dealing with the applications of management practice to a specialized business. It examines the principles of management and shows how these can be applied even in the unusual business.

LEIMKUHLER, F. F. 279
Trucking of radioactive materials: safety vs. economy in highway transport. Baltimore, Johns Hopkins P, 1963. viii, 156p, tables, \$7.50; 60s.

C Assessment of the safest and cheapest way of carrying reactor fuels and isotope solutions by road is based on a review of accident information obtained from large US fleet users and other US sources. Half the book deals with analyses of accident occurrence and consequences and these provide a useful digest of accident data relating to American commercial vehicles.

ORGANIZATION AND METHODS TRAINING COUNCIL 280
Applications of O & M. Ed. by G. E. Milward. Macdonald and Evans, 1964. xxi, 200p, index. 35s.

A-B Working briefs, based on experience, for the application of O & M to most of the main activities of a manufacturing business, e.g. stores control, purchasing, sales office routines, export. Suitable as a guide for practising O & M workers.

WEGNER, P. ed. 281
Introduction to system programming: proceedings of a symposium held at the London School of Economics, July 1962. NY, London, Academic P, 1964. 316p, diags. 70s. *APIC studies in data processing, no. 4*.

C Presents current thought of the principal British programming research groups. Papers in the earlier chapters are introductory and discuss the programming languages FORTRAN, ALGOL, COBOL, Rapidwrite, and FACT. Later chapters give accounts of specific topics in advanced system programming.

66 Chemical Technology

WEBB, F. C. 282
Biochemical engineering. London; Van Nostrand, ©1964. viii, 743p, tables, diags. bibliogs. 120s.

B Evolved from a one-year course in biochemical engineering. Shows extensively how the disciplines of chemical engineering, biology, and microbiology are related in the design and operation of biological processes on an industrial scale.

- WILLIAMS, C. T. 283
Chocolate and confectionery. 3rd ed. Leonard Hill, 1964. xv,222p, plates, tables, diagrs, bibliog. 2 gns.

B Scientific control of production, plant, raw materials, and the various products of the confectionery industry are described, with typical recipes and techniques of production.

669 Metallurgy

- DENNIS, W. H. 284
Metallurgy of the ferrous metals. Pitman, 1963. xi,393p, tables, diagrs, bibliogs. 50s.

B Elementary, largely descriptive, textbook which treats the sources, extraction, production, treatment, testing, examination, classification, and corrosion of iron and its alloys. Reasonably up to date and suitable for technical students.

- JACKSON, A. 285
Oxygen steelmaking for steelmakers. Newnes, 1964. viii,258p, plates, tables, diagrs, bibliog. 50s.

B Review of modern steelmaking technology written by a well-known authority. Recommended as a source of information on practice, which will be of use to steelmaking technologists, students of process technology, and steelmaking operatives.

67/68 Manufactures

- BREARLEY, A. 286
Worsted. Pitman, 1964. xi,148p, illus, tables, diagrs, bibliog. 20s. *Pitman's common commodities and industries series.*

B Senior Lecturer in Yarn Manufacture at Huddersfield College of Technology writes this excellent and much-needed book on worsted manufacture. Suitable for students taking the Textile Institute's Associateship, or similar textile examinations, or for apprentice trainees.

- COOK, J. G. 287
Your guide to plastics. Watford, Merrow Publishing Co., 1964. 272p, plates, diagrs. 25s. *Science for everyman series.*

A One of a series by a writer of technical books for the layman, presents attractively a wide range of information on the nature and properties of plastics, and on the technology and applications of the more important plastic materials. Profusely illustrated. Glossary and list of trade names are provided.

- PHILLIPS, L. N. and PARKER, D. B. V. 288
Polyurethanes: chemistry, technology, and properties. Iliffe, for the Plastics Institute, 1964. 7,129p, illus, tables, diagrs, refs. 30s.

B New title in the Plastics Institute Monograph series which deals very well with the chemistry of polyurethanes but rather less extensively with the technology of the subject. Useful to those new to this group of polymers.

- YARSLEY, V. E. and others 289
Cellulosic plastics: cellulose acetate; cellulose ethers; regenerated cellulose; cellulose nitrate. By V. E. Yarsley, W. Flavell, P. S. Adamson, and N. G. Perkins. Iliffe, for the Plastics Institute, 1964. 8,220p, illus, tables, diagrs, refs. 45s.

B Comprehensive survey of the commercial cellulose derivatives including their manufacture, compounding, and processing. Written primarily for students preparing for the examination of the Plastics Institute, but will doubtless be of use to others in the field.

7 THE ARTS

77 Photography

- ROSE, G. G. ed. 290
Cinemicrography in cell biology. NY, London, Academic P, 1963. xiv,500p, illus, tables, diagrs, refs. 132s.

C Leading workers describe the exploitation of varied time-scales and other special attributes of cinemicrography in diverse applications of advanced optical and radiographic techniques to specific problems. Gives wide coverage to general principles and the instrumentation employed.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUN	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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NO. 6

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5 MATHEMATICS AND NATURAL SCIENCES

291

DIRECTORY of British scientists, 1964-65. Benn, 1964. xxxii, 2003p. 8 gns.

D New, enlarged edition of list of scientists with British degrees, covering science and, in this edition, related fields in medicine. Total increase in entries of 50 per cent, sub-division of classified entries, and better balance in proportion of older scientists included makes this edition more comprehensive and useful.

292

DIRECTORY of selected scientific institutions in the USSR. Prepared by Battelle Memorial Institute for the National Science Foundation. Columbus, Ohio, Merrill, 1963. [i.e. March 1964]. 120s.

D Includes many fields of science in the USSR, other than biology and medicine. Divided into three sections: administration of science in the USSR, The Academies of Sciences, and other selected scientific institutions. Institutions are arranged alphabetically by English title and both English and Russian (transliterated) titles are given. Regular publications of the institutions are listed, also a table of suggested translations for Russian journal titles. Indexes include keywords and abbreviations for titles of institutions and subject and geographical lists.

GARRATT, A. *ed.*

293

Penguin science survey, 1964. Vol. A: automation, chemistry, education, mathematics, physics, space research. Penguin Books, 1964. 230p, plates, tables, diags. 7s 6d.

A Review articles for the scientist and intelligent layman on topics of general interest in the physical sciences.

TATON, R. *ed.*

294

Ancient and medieval science . . . to 1450. T & H, 1964. xvi, 552p, illus, diags. 6 gns. *General history of the sciences, vol. I.*

A-B English translation of notable French edition of 1957. Expositions by twenty-one scientists with world-wide scope.

TURKEVICH, J.

295

Soviet men of science: Academicians and Corresponding Members of the Academy of Sciences of the USSR. Princeton, (NJ), Van Nostrand, [1964]. 441p. 93s.

D Collection of brief biographies, arranged alphabetically, of more than four hundred living physical and biological scientists. Each entry includes professional interests and achievements and gives selected citations to biographies and writings, although in very brief and translated form. Prepared under a grant to the author from the National Science Foundation, and intended to facilitate liaison between Western and Russian scientists.

51 Mathematics

ABBOTT, W.

296

Practical geometry and engineering graphics: a textbook for engineering and other students. 7th ed. Blackie, 1963 [ie, Jan. 1964]. 373p, diags. 30s.

B Well produced volume, with clear diagrams illustrating the text and the solutions to carefully selected problems in all fields of graphics.

BICKLEY, W. G. and THOMPSON, R. S. H. G.

297

Matrices: their meaning and manipulation. EUP, 1964. xiii, 168p, tables. 1 gn. *General engineering series.*

B Introductory text for senior and postgraduate engineering students, covering the essentials of matrix theory and algebra with practical applications. Worked examples, exercises, and answers. Excellent book, easy to follow, suitable also for self-study.

- BRONSHTEIN, I. N. and SEMENDYAYEV, K. A. 298
Guide-book to mathematics for technologists and engineers. Oxford, NY, [etc], Pergamon P, 1964. 783p, tables, diagrs. 140s. *International series of monographs on pure and applied mathematics*, vol. 35.
B Useful handbook for the engineer not accustomed to working with mathematics. Contains tables of functions and integrals as well as a review of elementary mathematics, analytic geometry, and the foundations of mathematical analysis.
- HAWKINS, G. A. 299
Multilinear analysis for students in engineering and science. NY, Wiley, 1964. 219p, illus. 40s. *cloth*; 23s. *paper*.
B Self-study programme in tensor analysis from vectors, determinants, and matrices to strictly tensorial functions, operations, and manipulations. Excellent guide to the right approach to tensor analysis.
- HUNTER, J. 300
Number theory. O & B, 1964. ix, 149p. 10s 6d. *University mathematical texts*.
B Basic course in number theory suitable for undergraduate students. Among the topics dealt with are number systems, algebraic structures, congruences, and a very readable introduction to diophantine equations.
- MOSTOWSKI, A. and STARK, M. 301
Introduction to higher algebra. Tr. from the Polish by J. Musielak. Oxford, NY, [etc], Pergamon P; Warsaw, PWN—Polish Scientific Publishers, 1964. 474p, diagrs. 45s. *International series of monographs on pure and applied mathematics*, vol. 37.
B Intended to cover algebraic topics dealt with in most university mathematics courses. Includes some combinatorial problems, complex numbers, determinants, vector spaces and linear equations, rings of real and complex polynomials, theory of elimination, and quadratic and Hermitian forms, with an appendix on matrices and quadratic forms. Translation is good, numerous examples and exercises given.
- OWEN, G. E. 302
Fundamentals of scientific mathematics. NY, London, Harper and Row, 1964. 274p, illus. 13s 6d. *Harper torchbooks*. Paperback.
B Designed as a training programme for US secondary school teachers, provides an introduction for the physical science student to matrices, vector algebra, analytic geometry, functions, and differential and integral calculus. Clearly and interestingly presented, and delightfully illustrated.
- PITT, H. R. 303
Integration, measure and probability. O & B, 1963. viii, 110p. 25s. *University mathematical monographs*.
C Mathematical concepts and techniques for rigorously establishing the foundations of probability theory: sets, measures, integrals, probability, random variables, limit processes. For mathematical readers already familiar with probability theory. Welcome addition to the rather few British texts in this field.
- SCHREIDER, YU. A. ed. 304
Method of statistical testing: Monte Carlo method. Amsterdam, NY, Elsevier, 1964. ix, 303p, tables, diagrs. 90s. *Mathematical reference library*.
C In presenting this valuable account of a recently developed and important numerical technique, the five Russian authors of this (translated) book assume a moderate knowledge of statistical mathematics; bibliography of nearly three hundred references.
- STANTON, R. G. and FRYER, K. D. eds 305
Topics in modern mathematics. Englewood Cliffs (NJ), Prentice-Hall, ©1964. x, 187p, diagrs. 48s. *Prentice-Hall mathematics series*.
A-B Collection of articles at advanced secondary school level. Apart from one they are very good. Topics dealt with include 'Groups and fields', 'Boolean algebras', and 'Probability theory and statistics'. Unfortunately there is no bibliography.

52 Astronomy. Surveying. GeodesyMOORE, P. *ed.* 306

Practical amateur astronomy. Lutterworth P, 1963. xii,254p, plates, tables, diags, bibliogs. 30s. *Amateur astronomer's library, vol. IV.*

B Composite work by well-known amateur astronomers, each writing a chapter on a subject in which he is expert, provides a useful guide for the serious amateur who wishes to do useful work with comparatively inexpensive equipment.

53 Physics

BETHE, H. A. 307

Intermediate quantum mechanics. Notes by R. W. Jackiw. NY, Amsterdam, Benjamin, 1964. ix,276p, tables, refs. \$9.00 cloth; \$4.50 paper. *Lecture notes and supplements in physics.*

B Mostly an extension of elementary quantum mechanics to cover a detailed discussion of atomic structure, including a semi-classical treatment of interaction with radiation. Later chapters give concise but solid account of relativistic quantum theory and of the framework of field quantization.

BOAST, W. B. 308

Vector fields: a vector foundation of electric and magnetic fields. NY, London, Harper & Row, ©1964. 613p, diags. 79s.

B Special features include a detailed treatment of two-dimensional field plotting and the demonstration of how iteration techniques applied to finite difference equations lead to the solution of Laplace's and Poisson's equations by means of a digital computer. (Second rev. ed. of Principles of electric and magnetic fields.)

DE VRIES, L. and CLASON, W. E. *comps* 309

Dictionary of pure and applied physics. Vol. 2, English-German. Amsterdam, London, Elsevier, 1964. 341p. 55s.

D Compact dictionary comprising over 31,000 terms including words relating to physics from other fields. Compound nouns which may present difficulty in translation are listed alphabetically as phrases. More useful for advanced students and technicians requiring the German equivalent of specific phrases than for linguists.

KNOX, R. S. 310

Theory of excitons. NY, London, Academic P, 1963 [i.e. Jan. 1964]. vii,207p, tables, diags, refs. 68s. *Solid state physics: Advances in research and applications. Supplement 5.*

C Monograph written to the high standard expected of this series. Well-integrated account of the development of, and recent work on, exciton wave-functions and excitation energies in perfect crystals, of interactions with photons, phonons, dislocations, and point defects. Essential to specialists and advanced students.

MORSE, P. M. 311

Thermal physics. Rev. ed. NY, Amsterdam, Benjamin, 1964. xiii,455p, tables, diags, refs. \$10.50.

B-C Complete course for a high level honours degree in thermodynamics, kinetic theory, classical and quantum statistical mechanics, and their applications to many branches of physics. A model textbook with an excellent set of problems which is the result of a course on these topics by an acknowledged expert in educational physics. Deserves to become the recommended text in its field.

NELSON, W. C. *ed.* 312

High temperature aspects of hypersonic flow: proceedings of the Agard-NATO specialists' meeting . . . held at Rhode-Saint-Genèse, Belgium, 3-6 April 1962. Oxford, NY, [etc], Pergamon P, for Agard and NATO, 1964. xiv,786p, illus, tables, diags, refs. 300s. *Agardograph 68.*

C Thirty-six papers and subsequent discussions by internationally known authors. Classified into chapters on inviscid flows, experimental techniques, chemical kinetics and radiation, radiation and wakes, and heat transfer and viscous flows. A valuable feature is a round table discussion on future requirements for high temperature hypersonic facilities.

OMNES, R. and FROISSART, M. 313

Mandelstam theory and Regge poles: an introduction for experimentalists. NY, Amsterdam, Benjamin, 1963. xi,123p, tables, diagrs, refs. \$7.50 cloth; \$3.95 paper. *Frontiers in physics series*.

C One of four books published by Benjamin on the same general topic of Regge poles (the others are by Squires, Newton, and Frautschi). Present volume is probably the best for students meeting the subject for the first time. Very well written with physical ideas always clearly explained. Of interest to: postgraduate students in theoretical physics studying elementary particles; experimenters in high energy physics; theoretical physicists interested in quantum mechanics.

REULEAUX, F. 314

Kinematics of machinery: outlines of a theory of machines. Tr. and ed. by A. B. W. Kennedy. NY, Dover Publications; London, Constable, 1963 [ie, Feb. 1964]. xxiv,622p, illus, tables, diagrs. 24s; \$3.00. [First pub. Macmillan, 1876]. Paperback.

C Welcome reprint of one of the classics in its field. Reuleaux was one of the founders of modern kinematics; this is his comprehensive work on the subject. A student could get what he needs more easily from modern works; for one interested in historical development, this is necessary reading.

SKOBEL'TSYN, D. V. ed. 315

Soviet maser research. NY, Consultants Bureau, 1964. 186p, illus, tables, diagrs, refs. \$27.50. *Transactions of the P.N. Lebedev Physics Institute, vol. XXI*.

C Four papers of interest to specialists in the field of masers. The first two are concerned with the theoretical and experimental aspects of the use of masers in frequency (time) standards. The third is a theoretical treatment of hyperfine splitting in rotational spectra of molecules, the fourth a theoretical and practical appraisal of a maser depending on transitions in ND₃. Bibliography of papers published by members of the Russian Oscillation Laboratory between 1935-61 is included.

54 Chemistry

ALIMARIN, I. P. and PETRIKOVA, M. N. 316

Inorganic ultramicroanalysis. Tr. by M. G. Hill. Oxford, NY, [etc], Pergamon P, 1964. xv,151p, illus, tables, diagrs, refs. 40s. *International series of monographs on analytical chemistry, vol. 15*.

C Ultramicroanalysis is a relatively new technique in analysis and requires special apparatus and techniques. The authors devote a large proportion of the book to a description of these. Although possibly of use to only a few, a worthwhile addition to any library. (First pub. Moscow, Academy of Sciences, 1960.)

CALDIN, E. F. 317

Fast reactions in solution, Oxford, Blackwell Scientific Publications, 1964. x,306p, tables, diagrs, refs. 45s.

B-C Detailed and useful account of the various methods used to study fast reactions in solution. Selection is also given of reactions which can be studied by these techniques and their mechanisms discussed. Interesting book both for the research worker and for the more advanced undergraduate.

CALI, J. P. ed. 318

Trace analysis of semiconductor materials. Oxford, NY, [etc], Pergamon P, 1964. ix,282p, tables, diagrs, refs. 70s. *International series of monographs on analytical chemistry, vol. 11*.

C Excellent survey of the application of the most modern techniques of instrumental analysis to the difficult problem of analysing these increasingly improved materials now being used in large amounts in the electrical industry.

MANDELCORN, L. ed. 319

Non-stoichiometric compounds. NY, London, Academic P, 1964. xiii,674p, tables, diagrs, refs. 160s.

C Welcome, authoritative, and definitive text on a new and important area, covering theoretical and investigational aspects as well as all manner of compounds, both organic and inorganic, in the field. All thirteen contributors are eminent authorities, who write in a lucid and stimulating way. For newcomers to, and established workers in, the field as well as for advanced students.

NEVILLE, H. H., JOHNSTON, N. C. and BOYD, G. V. 320

New German-English dictionary for chemists. Blackie, 1964. xviii,330p. 55s.

D Compact dictionary, comprising over 33,000 terms, compiled jointly by specialists in German, chemistry, and information work. Intended mainly for practising chemists with little knowledge of German, provides more than a word for word translation, with cross references to the infinitive from other tenses of verbs. Grammatical notes are included, although this does not preclude the use of a basic grammar.

SCHWARZ, J. C. P. ed. 321

Physical methods in organic chemistry. O & B, 1964. xi,350p, tables, diags, refs. 50s.

B Principles and applications of the following techniques for organic structure determination: infrared (including Raman), ultraviolet, and visible spectroscopy, magnetic resonance, optical rotation, molecular weight determination, mass spectroscopy, diffraction methods, and dipole moments.

USSR ACADEMY OF SCIENCES 322

Analytical chemistry of uranium. Jerusalem, Israel Program for Scientific Translations, 1963. vii,374p, tables, diags, bibliog. 112s. *Analytical chemistry of elements series.*

C Very useful review of the analytical chemistry of uranium, wide in scope, covering classical methods as well as modern instrumental techniques. Very highly recommended. (First pub. Moscow, 1962.)

57 Anthropological and Biological Sciences

323

MICROBIAL behaviour 'in vivo' and 'in vitro': fourteenth symposium of the Society for General Microbiology held at the Royal Institution, London, April 1964. Ed. by H. Smith and J. Taylor. CUP, for the Society, 1964. x,296p, plates, tables, diags, refs. 45s.

C Analysis of the extent to which laboratory experiments have explained the behaviour of plant and animal pathogens within the host body. Deals with bacterial, fungal, protozoan, and virus infections. Obligate reading for those studying infection and pathogenicity.

WRIGHT, R. H. 324

Science of smell. A & U, 1964. xii,164p, plates, tables, diags, refs. 30s.

A-B Widely ranging chemical, physical, biological, and physiological aspects of the title subject are described and discussed for the layman and non-specialist by the author, who has made contributions to the understanding of this subject. Lucidly written account supported by references and numerous excellent illustrations.

577.1 Biochemistry

DIXON, M. and WEBB, E. C. 325

Enzymes. 2nd ed. Longmans, 1964. xix,950p, plates, tables, diags, refs. 90s.

B-C Excellent general text for research workers, largely rewritten and revised. Full account has been taken of the Report of the Commission on Enzymes in revising nomenclature and classification. Contains much additional material, and the bibliography is enlarged, but the character of the work has not been altered unduly.

MORRIS, C. J. O. R. and MORRIS, P. 326

Separation methods in biochemistry. Pitman, 1964. viii,887p, plates, tables, diags, refs. 115s.

B-C Deals comprehensively with the various forms of chromatography, electrophoresis, counter-current distribution, membrane separation methods, and miscellaneous useful methods based on zonal sedimentation and differential solubility. All essential experimental details are provided as well as theoretical background.

58 Botany

KAMEN, M. D. 327

Primary processes in photosynthesis. NY, London, Academic P, 1963. xii,183p, tables, diags, refs. 44s. *Advanced biochemistry series.*

B Concise, authoritative account of the spectroscopic and photochemical processes relevant to photo-synthesis. Occurrence and nature of photosynthesis and of chloroplasts are also discussed. Numerous references to the end of 1960 are provided. Valuable survey to those requiring a general text, especially biochemists and chemists starting upon research in this field.

59 Zoology

- THOMAS J. G. 328
Dissection of the locust. Witherby, 1963 [i.e. March 1964]. 72p, diagsr, refs. 8s 6d.

B Clearly written and well illustrated with many fully labelled diagrams. Its availability should do much to increase the popularity of the locust as an insect for dissection purposes. The book will be most useful in school and undergraduate classes in biology.

6 APPLIED SCIENCES**62 Engineering and Technology****621 Mechanical and Electrical Engineering**

- HEAD, J. W. 329
Mathematical techniques in electronics and engineering analysis. London, Iliffe; Princeton (NJ), Van Nostrand, 1964. 8,265p, tables, diagsr, refs. 45s.

B Makes available to non-mathematicians engaged in electrical engineering and other fields various mathematical techniques and devices for tackling problems commonly encountered; emphasis throughout is on use and procedure rather than proof.

621.3 Electrical Engineering

- ADVANCES in electronics and electron physics. Vol. 19. Ed. by L. Marton. NY, London, Academic P, 1964. x,323p, illus, tables, diagsr, refs. 86s.

C Four lengthy papers on electronic instrumentation for oceanography, radio wave scattering in the ionosphere, 'small' multimolecular atmospheric ions, and endfire antennae. Each paper has an excellent reading list appended.

- BLACKBAND, W. T. *ed.* 331
Propagation of radio waves at frequencies below 300 Kc/s: proceedings of the seventh meeting of the Agard Ionospheric Research Committee, Munich 1962. Oxford, NY, [etc], Pergamon P, for Agard, 1964. xii,478p, illus, tables, diagsr, refs. 140s. *Agardograph* 74.

B-C Thirty-one papers by international authorities provide good up-to-date coverage. Three in French, the rest in English. Directed towards studies relative to i.f. man-made signals, oscillations resulting from lightning discharges, the ionosphere, and wave propagation therein. Some overlapping is inevitable but has interest in showing different approaches on common ground.

- DUMMER, G. W. A. *and* ROBERTSON, J. M. *eds* 332
Japanese miniature electronic components and assemblies data annual 1964-65. Oxford, NY, [etc], Pergamon P, 1964. xxiii,483p, illus, tables, diagsr. 140s.

D Manufacturers' data sheets grouped by type of assembly, and indexed by alphabetical lists of specific headings and manufacturers. A list of Japanese industrial specifications is included, also tables for conversion of English to metric units.

- NERGAARD, L. S. *and* GLICKSMAN, M. 333
Microwave solid-state engineering. Princeton, (NJ), Van Nostrand, 1964. xx,229p, tables, diagsr, refs. 62s. *Van Nostrand series in electronics and communications*.

C Based on a series of lectures given by several workers in the semiconductor field. Treats the basic physics of solid-state microwave devices in such a way as to appeal to readers with an engineering background.

- SAY, M. G. *ed.* 334
Electrical engineer's reference book: a comprehensive work of reference, providing a summary of latest practice in all branches of electrical engineering. 11th ed. Newnes, 1964. xxviii,[2478]p, illus, tables, diagsr. 120s.

D New edition extensively revised, with many sections completely rewritten. Among the more important new ones are those on germanium and silicon, electronic motor control, and automatic signalling. Although on the whole it maintains the excellent standard of previous editions, it is a pity that the bibliographies to each section have been omitted.

624 Structural Engineering

- GLOVER, C. W. 335
 Structural precast concrete. CR Books, 1964. 664p, illus, tables, diagrs, refs. 95s. *Concrete library*.
 C Written by a consulting engineer who has specialized in structural precast concrete for the past thirty-five years, presents many different types of construction in a way that will refresh the experienced designer's memory rather than teach the young engineer how to design. Discusses advantages and disadvantages of precast construction and follows this with methods of design, production, erection, and appearance. Nomograms, tables, and graphs should prove extremely useful to the practising engineer.
- WILBY, C. B. 336
 Elastic stability of post-tensioned prestressed concrete members. Arnold, 1964. xii, 46p, plates, tables, diagrs, refs. 25s.
 C After a brief historical résumé the author develops his theories for axially and eccentrically stressed members. He shows a method of hand solution of the resulting eight or more algebraic and trigonometric equations.

628 Public Health Engineering

- BEDFORD, T. 337
 Basic principles of ventilation and heating. 2nd ed. Lewis, 1964. xii, 438p, illus, tables, diagrs, bibliog. 52s 6d.
 B Thoroughly revised edition of a standard work, in which the emphasis is laid on heating and ventilation in relation to human comfort, rather than on details of engineering practice.

629.1 Transport Engineering

- ARGYRIS, J. H. 338
 Recent advances in matrix methods of structural analysis. Oxford, NY, [etc], Pergamon P, 1964. xxiii, 187p, plates, tables, diagrs, refs. 60s. *Progress in aeronautical sciences*, vol. 4.
 C Review of matrix methods for use with modern electronic computer. Covers force and displacement methods, also with experimental results, for aircraft wing and fuselage structures. Non-linear problems, due to plasticity and finite displacements, are dealt with in detail for general structures.

63 Agriculture. Forestry. Livestock. Fisheries

- GREAT BRITAIN. Ministry of Agriculture, Fisheries and Food. 339
 Fertilizers for the farm. HMSO, 1964. iv, 90p, illus. 5s 6d. *Ministry of Agriculture, Fisheries and Food, bulletin no. 195*.
 B Contains sections on plant nutrients and fertilizer materials, the mixing and handling of fertilizers, and recommendations for their use with various crops. Appendices on the Fertilizer and Feeding Stuffs Act, subsidies, conversion tables, and the compensation value of fertilizers.
- WILLIAMS, W. 340
 Genetical principles and plant breeding. Oxford, Blackwell Scientific Publications, 1964. x, 504p, illus, tables, diagrs, bibliog. 70s. *Botanical monographs*, vol. 5.
 B-C Summarizes lucidly those genetic principles which are of importance to the plant breeder, and deals at some length with sex and incompatibility, breeding systems, continuous and discontinuous variation, and the genetics of disease resistance.

65 Business Techniques. Management

- CLOWES, W. 341
 Guide to printing: an introduction for print buyers. Heinemann, 1963. x, 134p, illus, plates, tables, diagrs, bibliog. 25s.
 A Admirably serves the purpose expressed in the sub-title. Will also be invaluable for librarians and library students who are or may become responsible for production of printed matter, in the form of leaflets, bound books, or technical diagrams. Author is director of a well-known printing house. 'Near-print' not dealt with, indexing not more than adequate.

- HYMERS, R. P. 342
Professional photographer in practice. New ed. Fountain P, 1964. 408p, tables. 70s.

A Guide, published under the authority of the Institute of British Photographers, to the conduct of a photographic business, dealing with organization, administration, selling, legal considerations, etc. Not a guide to the making of photographs. (First published 1958, as Business practice for professional photographers.)

66 Chemical Technology

- JUNIÈRE, P. and SIGWALT, M. 343
Aluminium: its applications in the chemical and food industries. Tr. from the French by W. C. E. Barnes. Crosby Lockwood, 1964. xiii, 267p, tables, bibliog. 55s.

C Primarily intended for the chemical engineer, this translation of a recent French work provides an authoritative review of the properties of aluminium and its alloys with particular reference to their application in the construction of plant in the plastics, chemical, and food industries. Invaluable source of reference.

- JEFFERSON, S. ed. 344

Massive radiation techniques. Newnes, 1964. viii, 324p, tables, diagrs, refs. 70s.

B Mainly a survey of the literature on the practical application of multicurie radioactive isotope sources in agriculture, food preservation, sterilization of drugs and of medical equipment, and in chemical technology. Brief accounts of the interaction of radiation with matter, radiation sources, and dosimetry. Numerous references, but few more recent than 1961.

67/68 Manufactures

- ERTELD, W., METTE, H.-J. and ACHTERBERG, W. eds 345

Defects in wood. In German, Russian, and English. Leonard Hill, 1964. 76p (text); [98]p (illustrations). 2 gns.

B Describes defects caused by injury to the tree, natural defects, fungal decay, and insect attack in trees or converted timber; and its excellent illustrations include many in colour.

681 Precision Mechanisms

- RENWICK, W. 346

Digital storage systems. Spon, 1964. ix, 212p, tables, diagrs, bibliogs. 50s.

C Presents an exhaustive survey of storage techniques from an engineering viewpoint. Many references given. Also includes a review of current and future developments.

69 Building Industry

- CALVERT, R. E. 347

Introduction to building management. Newnes, 1964. x, 244p, tables, diagrs, bibliogs. 50s.

B Useful text for students preparing for the Part II final examination of the Institute of Builders, covering principles of management and their application to building work. Comprehensive in subject matter and orthodox in treatment, depth is necessarily limited by size. Chapter on construction planning weakened by absence of reference to network analysis. Excellent bibliography.

- SCOTT, J. S. 348

Dictionary of building. Ill. by C. Bayliss. Penguin Books, 1964. 367p, tables, diagrs. 6s. *Penguin reference books.*

D Selective glossary of the building trades and their materials. Civil engineering and welding terms are mostly omitted, cross-references being given to *Penguin dictionary of civil engineering*, to which this is therefore supplementary.

7 THE ARTS

77 Photography

- VERRY, H. R. 349

Microcopying methods. Focal P, 1963. 175p, diagrs, bibliog. 3 gns.

A Summary of all available processes of microfilming, covering equipment, methods of printing, indexing and classifying, methods of storing, and comparative costs. A classified index of world suppliers is given, together with a comprehensive bibliography, and appendices covering tests for permanence, use of microfilm in evidence, fair copying, document preservation, and available standards.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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0 SCIENCE AND KNOWLEDGE

007 Information. Communication. Control Theory

- ASHBY, W. R. 350
Introduction to cybernetics. Methuen, 1964. 295p. 12s 6d. *Methuen university paperbacks*.
E Paperback reprint of a classic introductory textbook, demanding no more than elementary algebraic knowledge from the reader, and designed to give a sound working knowledge of the fundamentals of cybernetics. Absorbing and valuable text.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- GUENTHER, W. C. 351
Analysis of variance. Englewood Cliffs (NJ), Prentice-Hall, 1964. 199p, tables, diags. 54s.
B After a brief review of statistical inference, discusses randomized blocks, Latin squares, factorial experiments with two and three factors and the analysis of covariance. No great mathematical expertise, but a basic knowledge of elementary statistics, is assumed.
- MARGENAU, H. and MURPHY, G. M. 352
Mathematics of physics and chemistry. Vol. 2. Princeton (NJ), Van Nostrand, ©1964. v, 786p, tables, diags, refs. 97s.
C Second volume of this well-known book contains twelve chapters written by eminent scientists on a variety of modern subjects ranging from transport theory of gases, quantum electrodynamics, symmetry properties of magnetic crystals, to non-linear problems in physics, and many others. Most welcome advanced book, of high standard of presentation.
- MENDELSON, E. 353
Introduction to mathematical logic. Princeton (NJ), Van Nostrand, ©1964. x, 300p, diags, bibliog. 56s 6d. *University series in undergraduate mathematics*.
B This introduction ranges over a considerable variety of topics and is not suitable for beginners in logic. Ground covered includes sentence logic, predicate logic, formalized number theory, axiomatic set theory, and Markov and Turing algorithms. Amongst major results proved are Gödel's incompleteness theorem and the equivalence of the class of Turing computable and the class of partially Markov computable functions.
- MEYER, H. 354
Precalculus mathematics. Princeton (NJ), Van Nostrand, 1964. 365p, tables. 58s 6d.
B Stimulating presentation of algebra up to the binomial theorem, trigonometry up to inverse functions, and basic analytic geometry. Logical structure of each proof is given, and a short account of formal logic is appended. A book for the instructor, rather than the student. Examples, exercises, and answers are given.
- NOVIKOV, P. S. 355
Elements of mathematical logic. Tr. by L. F. Boron. O & B, 1964. xi, 296p, tables. 50s.
B Introduction to sentence and predicate logic with an application to axiomatic arithmetic. Intended for the weaker student—has very full discussions of fundamental notions.
- TSYPKIN, YA. Z. 356
Sampling systems theory and its applications. 2 vols. Tr. from the Russian by R. C. Hutchison, tr. edited by I. Cochrane. Oxford, NY, [etc], Pergamon P, 1964. xvi, 742p, tables, diags, bibliog. 100s per vol. *International series of monographs on electronics and instrumentation*, vols. 22, 23.
B-C Comprehensive textbook on the standard theory of sampled data control systems. Vol. 1 develops the basic mathematics of general discrete-time linear systems; vol. 2 deals with feedback systems and gives a detailed analysis of some practical examples. Suitable for professional engineers and advanced students.

52 Astronomy. Surveying. Geodesy

ABELL, G. 357
 Exploration of the universe. NY, London, Holt, Rinehart and Winston, ©1964. Illus, plates, tables, diagsr, bibliog. 76s.

B New survey course in astronomy for the general college or university student. Ranges from the earth to the depth of the cosmos, and is both easy to read and authoritative.

KING, H. C. 358
 Exploration of the universe: the story of astronomy. Secker & Warburg, ©1964. 304p, plates, diagsr. 37s 6d.

A History of ancient and modern astronomical ideas is developed in a continuous readable narrative packed with dates and useful factual information. Specially recommended for the history of modern theories of cosmology and stellar evolution.

53 Physics

BENHAM, P. P. and HOYLE, R. eds 359
 Thermal stress. Pitman, 1964. x,382p, plates, tables, diagsr, refs. 90s.

C Excellent introduction for graduate students and designers. Presented in three sections: thermal stress theory; thermal cycling and creep; industrial problems. Based on a course of lectures given at Imperial College, London, by experts from industry and the universities.

BOTH, V. H. 360
 Structure of atoms. NY, Collier-Macmillan, ©1964. iv,204p, tables, diagsr. 22s 6d. Paperback.

A Elementary text tracing the development of atomic theory from Democritus to the present. Deals with the basic laws of chemical combination, the kinetic theory, the electrical nature of matter, the Rutherford nucleus, wave motion, the Bohr-hydrogen atom, and wave mechanics. For the layman, it should explain simply the nature of scientific method.

BOWDEN, F. P. and TABOR, D. 361
 Friction and lubrication of solids. Part II. Oxford, Clarendon P, 1964. xx,544p, plates, tables, diagsr, refs. 4 gns. (Part I, revd vol. 15, 1950, 723.) *International series of monographs on physics*.

C Describes the properties of solids and particularly of surfaces for advanced academic workers. Industrial uses are hardly mentioned. Of great value to research scientists.

GARTENHAUS, S. 362
 Elements of plasma physics. NY, London, Holt, Rinehart and Winston, ©1964. viii,198p, diagsr, refs. 76s.

B-C Introduction to the theory of fully ionized gases, for graduate students of physics and for physicists and engineers covering the fields of fusion research, magnetohydrodynamic generation of power, and other aspects of applied plasma physics.

HEAVENS, O. S. 363
 Optical masers. London, Methuen; NY, Wiley, 1964. viii,103p, tables, diagsr, refs. 16s. *Methuen's monographs on physical subjects*.

B Valuable and concise survey of the field of optical masers suitable for research workers entering the field and for advanced undergraduates. Applications are dealt with briefly.

NOBEL LECTURES including presentation speeches and laureates' biographies: physics. 1942-1962. Elsevier, for the Nobel Foundation, 1964. xiii,621p, illus, tables, diagsr, refs. 160s.

C There were thirty-one laureates in the exciting twenty years of physics covered, but two of them did not give an address. Although inevitably advanced in character, this volume will stimulate and enlighten many beyond the ranks of professional physicists. Those addresses which were given in a language other than English have been translated in this presentation.

WRIGHT, W. D. 365
 Measurement of colour. 3rd ed. Hilger & Watts, 1964. x,291p, plates, tables, diagsr. 60s.

B Latest edition of a well-known book, describes and explains very clearly the trichromatic system of colour measurement, in particular the forms recommended by the C.I.E. It is up to date with full descriptions of both the 1931 (2° field) and 1963 (10° field) standard colour observers. Supporting chapters make it also a good reference book for colour vision.

539.1 Nuclear Physics

HASTED, J. B. 366
 Physics of atomic collisions. Butterworths, 1964. ix, 536p, tables, diagrs, refs. 130s. *Butterworths advanced physics series: Monographs on ionization and electrical discharges in gases.*

C Systematic account of collision processes in ionized gases for experimental physicists engaged in research on controlled fusion, magnetohydrodynamic generation of power, astrophysics, and similar fields.

LANE, A. M. 367
 Nuclear theory: pairing force correlations and collective motion. NY, Amsterdam, Benjamin, 1964. x, 250p, tables, diagrs, refs. \$8.00 cloth; \$4.95 paper. *Frontiers in physics series.*

C Based on a course of lectures given in 1962. Designed to review two recent developments in the theory of nuclear structure for the benefit of experimentalists, which it does most admirably. Photographic reproductions of a number of important original papers are included in the book.

54 Chemistry

FRANKEL, M. and PATAI, S. comps. 368
 Tables for identification of organic compounds. 2nd ed. Cleveland (Ohio), Chemical Rubber Co., ©1964. x, 301p. 67s 6d.

D Reference work containing lists of organic compounds and their derivatives. Compounds are given in order of increasing boiling or melting point and additional physical constants are often provided. Useful collection for organic qualitative analysis in teaching or research.

HAYWARD, D. O. and TRAPNELL, B. M. W. 369
 Chemisorption. 2nd ed. Butterworths, 1964. xi, 323p, illus, tables, diagrs, refs. 60s. (First ed. 1955.)

B-C New edition of this well-known monograph; text largely rewritten, an up-to-date approach and concise and logical treatment. Arrangement of material makes the book most useful for undergraduates seeking an introduction to the subject. Of particular value also to research workers in this field, as it provides information on current experimental techniques, as well as much quantitative data.

MELVILLE, Sir H. and GOWENLOCK, B. G. 370
 Experimental methods in gas reactions. London, Macmillan; NY, St Martin's P, 1964. viii, 464p, tables, diagrs, refs, bibliog. 4 gns.

B-C Second edition, while based on the valuable text by Farkas and Melville (1939), is an essentially up-to-date account which will again prove valuable to those engaged in experimental work involving gases. Brief chapter on kinetic theory is followed by others on pressure and temperature control and measurement, the preparation and analysis of gases, photochemical technique, and on miscellaneous techniques. Gas chromatography treated only briefly. Numerous selected references.

PETROV, A. D. and others 371
 Synthesis of organosilicon monomers. By A. D. Petrov, B. F. Mironov, V. A. Ponomarenko, and E. A. Chernyshev. Tr. from the Russian by C. N. Turton and T. I. Turton. Heywood, 1964. 492p, tables, diagrs, refs. 130s.

C Important text for those engaged in the fields of organosilicon chemistry and of silicone polymer chemistry and technology, since it includes a very full account of the extensive Russian work in this field. Detailed table on properties and full documentation (about 1,800 references) are features of this work, but the absence of at least a subject index is unfortunate.

PROGRESS in the science and technology of the rare earths. Vol 1. Ed. by L. Eyring. Oxford, NY, [etc], Pergamon P, 1964. 532p, tables, diagrs, refs. 120s.

C Detailed reviews on geochemistry, analytical and physical chemistry, alloy properties, uses and applications, etc., in sixteen chapters (one German, two French) covering period 1955-61. Three thousand references.

- ROSE, J. 373
Advanced physico-chemical experiments: a textbook of practical physical chemistry and calculations. Pitman, 1964. xviii, 414p, plate, tables, diags, refs. 50s.
B Collection of eighty-two experiments selected for honours degree, Grad.MRIC, and related courses. The experiments are taken from the literature, to which selected references are included. Experimental procedures, and especially the presentation and calculation of results, are described in detail, with helpful discussions and comments.
- SHIRLEY, D. A. 374
Organic chemistry. NY, London, [etc], Holt, Rinehart and Winston, 1964. xvi, 944p, tables, diags, refs. 86s.
B Balanced textbook of general organic chemistry. Subject is approached by the classification of functional groups. Modern theoretical concepts are introduced early in the text, and as they become appropriate, e.g. resonance and free radical initiated chain processes in chapter 3. Spectral techniques of structural determination are outlined.
- STEWART, R. 375
Oxidation mechanisms: applications to organic chemistry. NY, Amsterdam, Benjamin, 1964. xi, 179p, tables, diags, refs. \$7.50. *Frontiers in chemistry series*.
B-C Supplies a broad mechanistic treatment of oxidation reactions in organic chemistry. The main approach—on the reactions of a particular oxidant—leads to clarity and understanding of interpretations. To be recommended.
- TAYLOR, D. 376
Neutron irradiation and activation analysis. Newnes, 1964. ix, 185p, plates, tables, diags. 50s.
B Detailed introduction to the principles and techniques of radiochemical analysis employing neutron bombardment. Includes accounts of many applications, the use of automated equipment, the analysis of process streams, and special instrumentation.
- WASER, J. 377
Quantitative chemistry: a laboratory text. NY, Amsterdam, Benjamin, 1964. xiii, 432p, tables, diags, refs. \$6 cloth; \$3.95 paper.
B Gravimetric, volumetric, colorimetric, coulometric methods of analysis. Precise and well-illustrated descriptions of techniques. Substantial background in theory for each laboratory assignment. Appendices on the single-pan balance, free energy, equilibrium constants, and electrode potentials.
- 55 Geology. Meteorology**
- KEELING, P. S. 378
Geology and mineralogy of brick clays. Brick Development Association, [1964]. ix, 83p, illus, tables, diags, maps. 15s 6d.
A Short comprehensive guide to the geology and mineralogy of clay deposits, primarily intended for workers in the brick and ceramics industries. Clearly written and well illustrated, will be equally valuable to any general reader who wishes to obtain some knowledge of the subject.
- RITCHIE, A. S. 379
Chromatography in geology. Amsterdam, London, Elsevier, 1964. viii, 185p, plates, tables, diags, refs. 50s. *Methods in geochemistry and geophysics series*.
B Chromatographic techniques of partition, diffusion, absorption, ion-exchange, paper, and thin layer chromatography are discussed in detail. Treatment employs a minimum of mathematics and is designed for geologists; a knowledge of chemistry is not presumed. Main applications of chromatography to geology are presented, together with about 150 references.
- 57 Anthropological and Biological Sciences**
- LOCKE, M. ed. 380
Cellular membranes in development. NY, London, Academic P, 1964. xvi, 382p, illus, plates, tables, diags, refs. \$12.00. *22nd symposium of the Society for the study of development and growth*.
C Leading workers document and review unifying concepts and current trends of the revolution in knowledge about the organization and development of living systems brought about by the discovery of the ubiquity, the functional significance, and the ultrastructure and chemical composition of protoplasmic membranes. Likely to remain of permanent reference value to all biologists.

381

MOLECULES to man. Blue version. Biological sciences curriculum study. Arnold, 1964. 716p (plus 130p appendix), illus, diagrs. 55s.

A Textbook of biology up to 'A' level, beginning from molecular biology and continuing through genetics, evolution, and physiology, to the study of ecology. Sixty-two detailed laboratory investigations to be carried out by students are appended. Well produced and copiously illustrated, should easily capture the interest and attention of the student.

SCHUTTE, K. H.

382

Biology of the trace elements: their role in nutrition. Crosby Lockwood, 1964. xx,228p, illus, plates, tables, diagrs, bibliog. 40s. *International monographs: aspects of animal and human nutrition.*

A-B Well-balanced and reliable treatment. Basic principles are kept clearly in view despite the large amount of illustrative material which inevitably tends to dominate books on this subject. Style is intelligible to the layman but there would be too much detail for the casual reader. Will be welcomed by a wide range of professionals who need more than a nodding acquaintance with the subject without being specialists in the field, e.g. dieticians, doctors, veterinarians, agricultural advisers, and undergraduate biologists in general.

WILLIAMS, C. B.

383

Patterns in the balance of nature, and related problems in quantitative ecology. London, NY, Academic P, 1964. vii,324p, plates, tables, diagrs, refs. 60s. *Theoretical and experimental biology, vol. 3.*

C Compilation of the author's approach to the use of statistics in ecology. Emphasis is placed on the demonstration of pattern in animal and plant populations by the use of the logarithmic series, rather than on a full analysis of the problem. For the specialist research worker.

58 Botany

PURVIS, M. J., COLLIER, D. C., and WALLS, D.

384

Laboratory techniques in botany. Butterworths, 1964. 371p, illus, tables, diagrs, refs, bibliog. 57s 6d. *Laboratory techniques series.*

B Well-illustrated and extremely well-presented textbook. Recommended for students up to 'A' level botany, and botanical technicians in training. This work is long overdue, but none the less worth waiting for.

59 Zoology

WELTY, J. C.

385

Life of birds. Constable, 1964. xiii,546p, illus, tables, diagrs, refs. 4 gns.

A Clear, readable, and authoritative account of the anatomy and physiology of birds, their habits and behaviour, ecology, geographical distributions, origin, and evolution. Suitable for intelligent laymen and amateur ornithologists. Well illustrated with line diagrams and photographs.

6 APPLIED SCIENCES

62 Engineering and Technology

386

PROGRESS in applied materials research. Vol. 5. Ed. by E. G. Stanford, J. H. Fearon, and W. J. McGonnagle. Heywood, 1964. ix,237p, illus, tables, diagrs, refs. 65s.

C Diverse collection of six articles: a review of scintillation spectrometry, a consideration of ultrasonic propagation in anisotropic solids and its practical implication, an analysis of continuous radiological inspection principles, the theory of flow and fracture of ionic solids, a research report on the diffusion of oxygen in nitrogen in the pores of graphite, and a historical survey of non-destructive testing. Articles are of a high standard but lack a common theme, and their inclusion in this series is difficult to understand.

621 Mechanical and Electrical Engineering

621.039 NUCLEAR ENGINEERING

COOPER, A. R.

387

Chemical processing in the atomic energy industry. Iliffe 1964. 9,160p, tables, diagrs, bibliogs. 38s 6d. *Nuclear reactor technology series.*

B Useful summary of the methods available for processing of raw materials and reactor fuels at present. Some of the more important processes are dealt with in more detail. Good collection of references for further reading is given at the end of each chapter.

621.3 Electrical Engineering

- GATLAND, K. W. *ed.* 388
 Telecommunication satellites: theory, practice, ground stations, satellites, economics. London, Iliffe; Englewood Cliffs (NJ), Prentice-Hall, 1964. 10, 441p, plates, tables, diagrs, refs. 85s.
B Fascinating and authoritative book on the social, economic, and technical aspects of telecommunication satellite systems, with details of existing and future projects, written by experts directly concerned with these projects.
- SUTCLIFFE, H. 389
 Electronics for students of mechanical engineering. Longmans, 1964. ix, 353p, diagrs, bibliog. 50s cloth; 37s 6d paper.
B Designed mainly for second-year engineering students, covers fundamentals and a good many aspects of applied electronics; professional mechanical engineers will find it useful in dealing with specific measuring problems.

621.6 Fluid Distribution. Pipes. Pumps

- KOVÁTS, A. 390
 Design and performance of centrifugal and axial flow pumps and compressors. Oxford, NY, [etc], Pergamon P, 1964. xvi, 468p, tables, diagrs, refs. 5 gns.
C Concisely presented but detailed treatment of fundamentals, performance characteristics, and design principles, written from the standpoint of a designer familiar both with the factors which control performance and the practical problems which arise in various applications.

629.1 Transport Engineering

- AUTOMOBILE CLUB OF ITALY 391
 World car catalogue. Ed. by S. D'Angelo. Published annually. Iliffe 1964. liii, 565p, illus, diagrs. 90s.
D Third volume of this most comprehensive survey of current world car production. For every model there is a full technical description as supplied by the manufacturer, together with two photographs (occasionally in colour) of the whole car and an interesting detail, and notes on variations and optional accessories. Arrangement is alphabetical by model, with useful indices by country and make, list price, engine capacity, and maximum speed.
- FOGEL, L. J. 392
 Biotechnology: concepts and applications. Englewood Cliffs (NJ), Prentice-Hall, 1963 [i.e. Feb. 1964]. xvii, 826p, illus, tables, diagrs, bibliogs. 160s.
Prentice-Hall International series in space technology.
B Comprehensive work providing background information from which present systems of man-machine relationships may be improved and future systems designed to make them safe, efficient, and effective in their service to man. Encompasses both cybernetics and human engineering.

63 Agriculture. Forestry. Livestock. Fisheries

- AUDUS, L. J. *ed.* 393
 Physiology and biochemistry of herbicides. London, NY, Academic P, 1964. xix, 555p, illus, plates, tables, diagrs, refs. 110s.
C Conspectus by sixteen distinguished contributors from European and North American universities, research institutes, etc., well documented in relation to the mass of current and recent conference papers and periodical articles in this field of vigorous research; ably edited by Professor Audus.
- O'BRIEN, R. D. and WOLFE, L. S. 394
 Radiation, radioactivity, and insects. Prepared under the direction of the American Institute of Biological Sciences for the Division of Technical Information, USAEC. NY, London, Academic P, ©1964. xv, 211p, tables, diagrs, refs. 48s cloth; 28s paper.
B-C Brief but well-written chapters on the general biology of insects, their response to light, and some general physiology and biochemistry; interesting accounts of the uses of radiation in controlling insect populations and of the methods and results obtained through the use of isotopes in studying the metabolism of a wide variety of insecticides. No attempt is made to discuss genetic effects, but a chapter on non-genetic radiation damage is included.

65 Business Techniques. Management

- BATTERSBY, A. 395
Network analysis for planning and scheduling. Macmillan, 1964. 218p, diagsr, bibliog. 2 *gns*.
A-B Comprehensive introduction to the techniques of network analysis (including PERT), designed to give a working knowledge of the basic methodology. Advanced mathematics is not required, and numerous worked examples and exercises (with answers) are given. Useful textbook for managers and students of management.
- BURNETT-HALL, D. G., DRESEL, L. A. G. and SAMET, P. A. 396
Computer programming and autocodes. EUP, 1964. viii, 106p, tables, diagsr, refs. 25s. *Applied mathematics series*.
B-C Introduction to programming techniques. Simple, well-illustrated worked examples. Describes Pegasus-Sirius, Mercury, and Elliott 803 autocodes and ALGOL. Useful to scientists and engineers with no previous knowledge of the subject.
- CANNON, R. V. and WALLIS, F. G. 397
Graphic reproduction: copy preparation and processes. Vista Books, 1963. 123p, illus, tables, diagsr, refs, bibliog. 25s. *Facts of print series*.
A Clear illustrated outline for those preparing illustrations for reproduction, deals also with plate and block making.
- LAWSON, L. E. 398
Offset lithography. Vista Books, 1963. 184p, illus, tables, diagsr. 25s. *Facts of print series*.
B Includes brief history of process and considerable detailed information for print buyers and offset litho users, covering the whole process from plate making to print. Author is chief technologist of well-known lithographic suppliers. Useful index.
- VAN NESS, R. G. 399
Principles of punched card data processing. Rev. ed. Elmhurst, Ill., Business P, 1964. 286p, illus, tables, diagsr. \$10.00.
E Definitive textbook for those concerned with the organization and management of data-processing departments. Covers historical development, basic principles, machinery, coding, standard practices, management responsibilities, data-processing services, and basic card-system computers. Deals mainly with IBM equipment.

66 Chemical Technology

- COULSON, J. M. and RICHARDSON, J. F. 400
Chemical engineering. Vol. 1, fluid flow, heat transfer, and mass transfer. 2nd rev. ed. Oxford, NY, [etc], Pergamon P, 1964. xi, 492p, plates, tables, diagsr, refs. 50s.
B Second edition of popular textbook first published 1954. Differs from first edition mainly by its greater emphasis on the physical fundamentals of the transport processes. Otherwise maintains the judicious blend of theory and practical application. Liberal use of worked examples should continue to ensure its success with students.
- TAYLOR, H. F. W. ed. 401
Chemistry of cements. Vol. 1. NY, London, Academic P, 1964. xi, 460p, plates, tables, diagsr, refs. 100s.
C In the entire world of literature there are, apart from this volume, only four major books dealing with cement chemistry. Two are in English and are excellent but neither is up to date. Taylor's work is of the highest standard, includes the latest available information, and has been contributed to by most, if not all, of the authorities active in this field. It would be a first recommendation to anyone seeking information on cement chemistry, but does not supersede the other two works available in English by F. M. Lea and R. Bogue.

669 Metallurgy

REED-HILL, R. E. 402

Physical metallurgy principles. Princeton (NJ), Van Nostrand, ©1964. x,630p, illus, tables, diags. 85s. *University series in basic engineering*.

B Sound and well-presented introduction to modern principles of metallurgy, avoiding purely factual information. Very suitable as an introductory text for university students.

KURREIN, M. 403

Plasticity of metals: the mechanical behaviour and the changes in structure of metals under plastic deformation. Griffin, 1964. x,270p, illus, tables, diags. 75s.

B Investigates relationship between plastic deformation of metals and the changes in macro- and in microstructure. Of interest to mechanical engineers and production engineers and to engineering metallurgists.

67/68 Manufactures

MINK, W. 404

Practical injection moulding of plastics. Iliffe, 1964. 164p, plates, diags. 47s 6d.

B Translation from the second edition of a German textbook. Author is a member of the staff of Battenfeld Maschinenfabriken, one of the largest plastics-plant manufacturers in the world, and his book is intended for technologists working in the plastics industry.

MUNNS, M. G. 405

Plastics moulding plant. Vol. 2, injection moulding equipment. Iliffe, for the Plastics Institute, 1964. 8,274p, plates, diags. 57s 6d. *Engineering series*.

B The official backing accorded to this manual authenticates its coverage for the professional examinations of the Plastics Institute. Although it is the second volume of a larger work, sufficient information on techniques, moulds, plastics, and hydraulics is included for the book to stand on its own.

VALE, C. P. and TAYLOR, W. G. K. 406

Aminoplastics. Iliffe, for the Plastics Institute, 1964. 7,143p, plates, tables, diags, refs. 37s 6d. *Engineering series*.

B Now fully revised and rewritten, this book sponsored by the Plastics Institute provides an authoritative introduction to the chemistry and applications of the aminoplastics, particularly suitable for students and plastics technologists.

69 Building Industry

CHILDE, H. L. 407

Concrete finishes and decoration. Concrete Publications, 1964. v,138p, illus, diags. 18s. (Revision of Concrete surface finishes, renderings and terrazzo, by W. S. Gray and H. L. Childe. 2nd ed. 1943.)

A The many methods of obtaining an attractive surface finish on concrete are clearly described in some detail with the aid of photographs and diagrams. Good introduction for all those concerned with the production or use of such finishes.

7 THE ARTS**77 Photography**

BATES, G. G. 408

35mm. single lens reflex manual. Fountain P, 1964. 255p, illus, diags. 40s.

A Guide for the amateur photographer to the choice and use of miniature reflex cameras and their ancillary equipment.

DICKSON, J. 409

Instant pictures: the complete Polaroid Land Camera Guide. Pelham Books, 1964. 158p, plates, tables, diags. 30s.

A Complete account of the Polaroid Land process of 'instant' photography and of the equipment available, with descriptions and illustrations of its applications for professional and scientific users. Essential title for the 'Photography' shelf.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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August 1964

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0 SCIENCE AND KNOWLEDGE

HAWKINS, D. 410

Language of nature: an essay in the philosophy of science. San Francisco, London, Freeman, ©1964. xii, 372p, illus, diags, bibliog. 54s. \$7.50.

A-B Fascinating, unorthodox attempt to demonstrate the relevance of modern science to problems of philosophy, ranging through mathematics, physics, probability, information theory, psychology, ethics, and economics. The author's erudition, easy, informal style, and wit make the book a pleasure to read.

007 Information. Communication. Control Theory

EDWARDS, E. 411

Information transmission: introductory guide to the application of the theory of information to the human sciences. C & H, 1964. 134p, plates, tables, diags, bibliog. 15s. Paperback.

A Clear and simple discussion of uncertainty, redundancy, and coding, and some applications of these concepts to studies of reaction times, perception, and learning. Channel capacity and the idea of continuous information, with further applications, are also treated. A straightforward, non-mathematical introductory work.

02 Librarianship

FOSKETT, D. J. 412

Science, humanism and libraries. Crosby Lockwood, 1964. ix, 246p, refs. 26s. *New librarianship series*.

A Collection of papers by the Librarian of the Institute of Education of the University of London which reflects his wide and energetic interest in providing and encouraging bibliographical and library services to humanists and social scientists no less than to scientists and technologists.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

ATKINSON, F. V. 413

Discrete and continuous boundary problems. NY, London, Academic P, 1964. xiv, 570p, refs. 118s. *Mathematics in science and engineering*, vol. 8.

C Comprehensive and up-to-date account of eigenfunction theory of recurrence relations and differential equations in one independent variable. Topics include orthogonal polynomials, Sturm-Liouville theory, matrix systems, and some integral equation analysis. Contains extensive appendices, notes, and references.

COHEN, L. W. and EHRLICH, G. 414

Structure of the real number system. Princeton (NJ), Van Nostrand, [1964]. viii, 116p, bibliog. 33s. *University series in undergraduate mathematics*.

B Concise introduction to the subject starting with a brief account of set theory, continuing with natural numbers, integers, rational numbers, real numbers, and complex numbers. Many exercises included.

FOX, L. 415

Introduction to numerical linear algebra. Oxford, Clarendon P, 1964. xi, 295p, tables, bibliogs. 50s. *Monographs on numerical analysis*.

B Mature but non-formalized development of basic topics in numerical matrix analysis, chosen for their relevance to automatic digital computing. For undergraduates specializing in numerical analysis, and all computer users requiring an understanding of this major subject.

JENNINGS, W. 416

First course in numerical methods. NY, Macmillan; London, Collier-Macmillan, ©1964. xiv,233p, tables, diagrs, refs, bibliog. 55s.

B Introductory course in computing, centred on problems of approximation of functions, numerical integration of ordinary differential equations, and numerical solution of polynomial equations and systems of linear equations. All the numerical problems (to which answers are given) can be solved on a desk calculator. Basic knowledge of calculus and differential equations is assumed.

53 Physics

BARNA, P. S. 417

Fluid mechanics for engineers. 2nd ed. Butterworths, 1964. xi,381p, illus, tables, diagrs. 57s. 6d.

B Describes briefly the main principles of fluid mechanics and covers their application to engineering problems. Contains illustrated worked examples, problems with answers, and useful references to more advanced texts.

CALLAWAY, J. 418

Energy band theory. NY, London, Academic P, 1964. x,357p, tables, diagrs, bibliog. 80s. *Pure and applied physics series, vol. 16.*

C Comprehensive survey of the ideas, methods, and results of calculations of the energy levels of electrons in metals and semiconductors. Final section is devoted to effects on the electronic structure of impurities and magnetic and electric fields, and calculations of optical properties are included. An important contribution to theoretical solid state physics.

DE BOER, J. and UHLENBECK, G. E. eds. 419

Studies in statistical mechanics. Vol. II. Amsterdam, North-Holland, 1964. xiii,272p, tables, diagrs, refs. 70s.

C Three review articles of high quality. First, 'Imperfect Bose Gas', a study of a theoretical model of liquid helium, by Kerson Huang; second, 'A critical study of some theories of the liquid state including a comparison with experiment', by J. M. H. Levelt and E. G. D. Cohen; third, 'The heat conductivity and viscosity of polyatomic gases', a theoretical treatment by C. S. Wan Chang and the editors. For theoretical and physical chemists.

FOCK, V. 420

Theory of space, time, and gravitation. 2nd rev. ed. Tr. from the Russian by N. Kremmer. Oxford, NY, [etc.], Pergamon P, 1964. xii,448p, refs. 100s.

C Comprehensive and lucid introduction to the special theory of relativity and the general theory, with special attention to the author's own version of the theory of gravitation and general relativity.

GOODMAN, L. E. and WARNER, W. H. 421

Dynamics. Glasgow, Blackie, [1964]. xiii,619p, tables, diagrs. 45s.

B Introductory course in dynamics for engineering students. Text is based on vectorial approach, and satisfactory introduction to vector calculus is provided. Treatment is patchy—the chapter on vibrations completely ignores the vector approach.

GOODMAN, L. E. and WARNER, W. H. 422

Statics. Glasgow, Blackie, [1964]. xi,367p, diagrs. 40s.

B Introduction to statics for engineering students. Based on vectorial approach to statically determinate systems, with satisfactory introduction to vector algebra. Variational methods are not treated, but the vector approach is taken as far as introducing tensors.

OLSZAK, W., MROZ, Z., and PERZYNA, P. 423

Recent trends in the development of the theory of plasticity. Oxford, NY, [etc.], Pergamon P; Warsaw, PWN—Polish Scientific Publishers, ©1963. vi,196p, diagrs, bibliogs. 50s.

C Valuable advanced survey of research in plasticity, published mainly 1953–60. Summary and critical assessment of the principal papers on theoretical stress-strain relations from America, Britain, Poland, Russia, and elsewhere, with a few pages on fundamental experiments. Applications are dealt with more selectively. Special section is devoted to dynamical problems; extensive bibliographies.

- PAIGE, E. G. S. 424
Electrical conductivity of germanium. Heywood, 1964. 244p, tables, diags, refs. 70s. *Progress in semiconductors*, vol. 8.

B-C Provides not only a comprehensive survey of the processes of conduction in germanium, but a useful guide to the applicability of current theoretical models. Apart from the formal theories of conduction and scattering, the galvanic-magnetic effects, strain effects, and high electric field effects are treated in some detail.

539.1 Nuclear Physics

- HAGEDORN, R. 425
Introduction to field theory and dispersion relations. Oxford, NY, [etc], Pergamon P, 1964. vi, 127p, diags. 35s.

C Based on a series of lectures given in 1959 at the European Organization for Nuclear Research, Geneva, and published originally as a CERN report. Useful introduction to theory of interactions of particles for graduate theoretical physicists.

- MOOREHOUSE, R. G. ed. 426
Strong interactions and high energy physics: Scottish Universities' summer school, 1963. Edinburgh, London, O & B, 1964. xvi, 475p, tables, diags, refs. 115s.

C Useful for research students and other physicists working in elementary particles, possibly also in atomic and nuclear physics. Authors are highly qualified, and text very up-to-date. Gives a general framework for scattering theory and cross-sections, including spin and many-channel scattering.

- SOKOLOV, A. A. 427
Elementary particles. Tr. from the Russian by W. E. Jones, tr. edited by D. ter Haar. Oxford, London, [etc], Pergamon P; NY, Macmillan, ©1964. 75p, tables, diags, refs. 10s. Soft covers. *Commonwealth and international library of science, technology, engineering, and liberal studies*.

C Extended text of a lecture given by Prof. Sokolov of the Moscow State University in January 1962, published Moscow 1963. Thus, although it does not give the very latest picture of a rapidly changing field, it introduces the subject for those who wish to understand and/or specialize in nuclear physics. Includes recent work on the neutrino, parity, strange particles, and resonances.

- TAIT, J. H. 428
Introduction to neutron transport theory. Longmans, 1964. x, 142p, tables, diags, bibliog. 24s. *Mathematical physics series*. Paperback.

B Useful exposition of mathematical methods of neutron transport theory. Approach dispenses with mathematical rigour and emphasizes the physics of the problem. Numerical methods are discussed. Suitable for postgraduate courses in reactor physics.

- WILETS, L. 429
Theories of nuclear fission. Oxford, Clarendon P, 1964. x, 132p, tables, diags, bibliog. 18s. *Oxford library of the physical sciences*. Paperback.

C Discussion of the foundations, assumptions, and weaknesses of the various 'Models' of nuclear fission, from the liquid drop model to the more recent statistical models.

54 Chemistry

- LEE, J. D. 430
Concise inorganic chemistry. NY, London, Van Nostrand, ©1964. xii, 248p, tables, diags. 50s. cloth; 27s. 6d. paper.

B Concise textbook up to first year university standard. Subject matter arranged by the long form of the periodic table. Approach is from the electronic structure in atoms; types of bonds and theories of bonding (with emphasis on the valence bond approach) are discussed.

- PROGRESS in solid state chemistry, vol. 1. Ed. by H. Reiss. Oxford, NY, [etc], Pergamon P, 1964. vii, 536p, illus, tables, diags, refs. 120s. 431

C Eleven well-annotated, authoritative reviews of solid-state topics stressing the value of physical techniques (thermal conductivity, ferri electricity, X-ray diffraction, quadruple resonance, infrared spectroscopy) for characterising chemical behaviour of inorganic and organic solids.

RAO, C. N. R.

432

Chemical applications of infrared spectroscopy. NY, London, Academic P, 1963 [i.e. Feb. 1964]. 683p, tables, diags, refs. 139s. 6d.

C Extensive and detailed account of the characterization of compounds by infrared spectra. In addition to simpler organic materials, substantial sections deal with polymers, biochemical materials, and inorganic compounds. Solvent effects, absorption, and matrix isolation are briefly dealt with. Very full and useful references.

SHUBNIKOV, A. V., BELOV, N. V. and others

433

Colored symmetry: a series of publications from the Institute of Crystallography, Academy of Sciences of the USSR, Moscow, 1951-1958. Tr. by J. Itzkoﬀ and J. Gollob. Ed. by W. T. Holser. Oxford, NY, [etc], Pergamon P, 1964. xxv, 263p, plates, tables, diags. 70s.

C Translation makes available to the West the basic work of two of Russia's leading crystallographers. Part I, by Shubnikov, is on symmetry and antisymmetry of finite figures, and the second part by Belov and others deals with infinite groups of coloured symmetry. Bibliography of 201 references.

434

SUPPLEMENT to Mellor's comprehensive treatise on inorganic and theoretical chemistry. Vol. VIII, supplement 1: nitrogen (Part 1). Longmans, 1964. lxxviii, 619p, tables, diags, refs. 280s.

C Detailed review of advances during the past thirty-five years in the study of the production and properties of nitrogen, ammonia and ammonium salts, and of the biological activity of nitrogen and its compounds, with copious references to original sources of information.

55 Geology. Meteorology

435

ADVANCES in organic geochemistry: proceedings of the International Meeting in Milan, 1962. Ed. by U. Colombo and G. D. Hobson. Oxford, NY, [etc], Pergamon P, 1964. ix, 488p, plates, tables, diags, refs. 120s. *International series of monographs on earth sciences*, no. 15.

C Important volume containing thirty-nine papers on all aspects of organic geochemistry, including analytical techniques, many of which are by internationally known authors. Useful account of recent advances in the field.

436

DELTAIC and shallow marine deposits: proceedings of the sixth International Sedimentological Congress, The Netherlands and Belgium - 1963. Ed. by L. M. J. U. van Straaten. Amsterdam, NY, Elsevier, 1964. xvi, 464p, illus, tables, diags, maps, refs. 130s. *Developments in sedimentology*, vol. 1.

B-C Useful and varied collection of papers touching on almost all aspects of this rapidly expanding branch of geology. Indispensable for the specialist or research worker and a useful general reference for student courses.

FOMIN, L. M.

437

Dynamic method in oceanography. Amsterdam, London, Elsevier, 1964. xi, 212p, tables, diags, bibliog. 70s. *Elsevier oceanography series*.

C Thorough and detailed account by a recognized authority on the problem, of the indirect computation of ocean currents from measurements of temperature and density. Of particular value to the observational oceanographer; includes an internationally representative bibliography.

HODGSON, J. H.

438

Earthquakes and earth structure. Englewood Cliffs (NJ), Prentice-Hall, ©1964. x, 166p, illus, tables, diags, maps. 24s. Paperback.

A Readable introduction to some elements of the study of earthquakes and their effects; contains chapters on observational seismology, seismic geography, the causes of earthquakes, and some comment about earthquake engineering; text is almost wholly non-mathematical. Useful for the general reader and undergraduate student in the earth sciences not specializing in geophysics.

439

PHYSICS and chemistry of the earth, vol. 5. Ed. by L. H. Ahrens, F. Press, and S. K. Runcorn. Oxford, NY, [etc], Pergamon P, 1964. 398p, tables, diagrs, refs. 100s. *Progress series*.

C Fifth volume of this well-established series contains six articles, three each in the fields of geophysics and geochemistry. Authors are of international standing, and each article is an important contribution to the literature in its particular field of study.

57 Anthropological and Biological Sciences

BARRINGTON, E. J. W.

440

Hormones and evolution. EUP, 1964. viii, 154p, tables, diagrs, refs. 15s. *Modern biology series*.

B Presented in a readable essay form, with emphasis on the evolutionary implications, this is a comparative account of the structure and functioning of endocrine systems, especially of the chemistry of their hormones.

HAGGIS, G. H. and others

441

Introduction to molecular biology. G. H. Haggis, D. Michie, A. R. Muir, K. B. Roberts, and P. M. B. Walker. Ed. by G. H. Haggis. Longmans, 1964. xii, 401p, illus, tables, diagrs, bibliog. 40s.

B Covers the full range of the subject for biology and medical students, and the general reader with an 'A'-level knowledge of chemistry and physics.

58 Botany

442

PROCEEDINGS of the Fourth International Seaweed Symposium, Biarritz, September, 1961. Ed. by A. Davy de Virville and J. Feldmann. Oxford, NY, [etc], Pergamon P, 1964. [Papers in English, French, and German.] xxiii, 467p, illus, tables, diagrs, refs. 100s.

C The triennial 'Congrès International des Algues Marines' provide a view of research activity and a guide to the growth of the widely scattered literature in selected fields of phycology, a subject for which specialized journals and up-to-date texts are few. The current volume, divided into biology, ecology, chemistry, and utilization, gives prominence to the chemistry of algal carbohydrates.

59 Zoology

BUETTNER-JANUSCH, J. ed.

443

Evolutionary and genetic biology of primates. Vol. II. NY, London, Academic P, 1964. xi, 330p, illus, plates, diagrs, refs. 89s. [Vol. I, reviewed April 1964].

C Useful review of contemporary research on the primates. In Vol. II, specialists are particularly concerned with examining the modern work in virology, serum proteins, and haemoglobins. Reproductive physiology of the Lemuroidea, the use of the hand in lower primates and studies in sexual behaviour and displays of many of the primates are particularly interesting sections.

BURNETT, A. L. and EISNER, T.

444

Animal adaptation. NY, London, Holt, Rinehart & Winston, ©1964. viii, 136p, illus, diagrs, refs. 12s. 6d. Limp covers. *Modern biology series*.

A Readable account of the basic concept of animal adaptation, not a broad treatment. This series attempts to regard the subject of biology as a collection of phenomena rather than a catalogue of animals and plants.

BUSNEL, R.-G. ed.

445

Acoustic behaviour of animals. Ed. by R.-G. Busnel for the International Committee on Bio-acoustics. Amsterdam, NY, Elsevier, 1963. xx, 933p, illus, tables, diagrs, refs. 250s.

C Twenty-five articles in English, by an international team, members of the eight-year-old International Committee on Biological Acoustics, cover in great detail techniques for measuring and recording animal sounds, the experimental analysis of information conveyed by sounds, the anatomy and physiology of the sound-producing and sound-perceiving organs, and finally a summary of acoustic behaviour.

- COLEMAN, W. 446
 Georges Cuvier, zoologist: a study in the history of evolution theory. Cambridge (Mass.), Harvard UP; London, OUP, 1964. x,212p, illus, plates, refs, bibliog. 40s.

C Full and readable study of a natural scientist who lived after Linnaeus and before Darwin. Of interest to students of the history of science, and particularly the history of classification.

- SHORT, D. J. and WOODNOTT, D. P. eds. 447
 ATA manual of laboratory animal practice and techniques. Ed. by D. J. Short and D. P. Woodnott. Foreword by Sir C. Harrington. Crosby Lockwood, 1963. ix,350p, illus, tables, diagrs, refs. 45s.

B Textbook and training manual for animal-house technicians, deals comprehensively with general aspects of animal husbandry, and introduces some special techniques associated with radioactivity, surgery, and infection.

6 APPLIED SCIENCES

62 Engineering and Technology

- JOHNSON, L. G. 448
 Statistical treatment of fatigue experiments. Amsterdam, NY, Elsevier, 1964. ix, 114p, tables, diagrs. 40s.

B-C Reliability of interpretation of fatigue data for a limited number of test results, minimum test programmes to extract maximum data, and many similar problems are discussed. Statistical formulae are given, with tables and charts. Prior knowledge of fatigue and statistics required.

- SHAFFER, P. T. B. 449
 Materials Index. NY, Plenum P, 1964. xx,740p, bibliog. \$17.50. *Plenum Press handbooks of high-temperature materials, no. 1.*

D Collection of data (chemical, electrical, mechanical, nuclear, optical, structural, and thermal) on elements, oxides and mixed oxides, borides, carbides, nitrides, and silicides, originally published by the Carborundum Company as 'Properties of High Temperature Materials'. Uncritical selection, but each figure is referenced.

621 Mechanical and Electrical Engineering

621.039 NUCLEAR ENGINEERING

- 450
 ADVANCES in nuclear science and technology. Vol. 2. Ed. by E. J. Henley and H. Kouts. NY, London, Academic P, 1964. x,378p, tables, diagrs, refs. 100s.

C Review articles, written by experts, on reactor transfer functions, heat exchangers in nuclear power plants, the formation of free radicals in polymers by radiation, reactor parameters in subcritical and critical assemblies, neutron thermalization, and the use of digital computers in nuclear reactor design.

- LOFTNESS, R. L. 451
 Nuclear power plants: design, operating experience, and economics. Princeton (NJ), Van Nostrand, ©1964. xii,548p, illus, tables, diagrs, bibliogs. 97s. *Van Nostrand nuclear science series.*

B Synthesis of available information on all nuclear power plants which have been built or are being built throughout the world. Includes commercial power reactors, prototype power reactors, experimental power reactors, and civil propulsion reactors.

621.3 Electrical Engineering

- INSTRUMENT SOCIETY OF AMERICA 452
 ISA transducer compendium. Ed. by E. J. Minnar. NY, Plenum P, 1963. xviii,567p, illus, tables, diagrs. \$25.00.

D Very comprehensive coverage of present-day transducer availability, largely but not exclusively of American origin. Specifications of transducer performance are tabulated for ease of comparison and in sufficient detail to allow initial selection. Classification is in fourteen divisions, according to the variable to be measured. Lists of manufacturers, addresses, and products.

RAWLINSON, R. 453
Installation and maintenance of electric motors. Newnes, 1964. 103p, illus, tables, diags. 10s. 6d. *Newnes practical handbook*.

A-B Useful practical guide to the choice, installation, and maintenance of electric motors for the use of factory engineers; would also be useful to farmers. A plainly written, well illustrated book which could also be useful to general readers interested in factory equipment.

REEVES, E. A. 454
Installation and maintenance of industrial switchgear. Newnes, 1964. 112p, illus, tables, diags. 10s. 6d. *Newnes practical handbook*.

A-B Particularly well laid out, conveniently sized book for the factory engineer, useful also to technical authors and to the general reader who is interested in factory equipment.

ROLLIN, B. V. 455
Introduction to electronics. Oxford, Clarendon P, 1964. xiii, 216p, plate, tables, diags, refs. 30s.

B Brief description and analyses of many aspects of electronic engineering from circuit theory, amplifiers, and oscillators, through valves, transistors, Masers, etc., to communication, propagation, and noise. Very comprehensive though rather superficial introduction. Details of laboratory experiments on electrons at Oxford University included.

THOMPSTONE, R. 456
Cable jointing. Newnes, 1964. 112p, illus, tables, diags. 10s. 6d. *Newnes practical handbook*.

A Practical book, adequately covering its subject of cable jointing on systems up to 11,000 volts working; should be most useful to those learning this skilled craft from those well practised in it.

621.4 Internal combustion and other special engines

RING, E. and others, eds. 457
Rocket propellant and pressurization systems. Englewood Cliffs (NJ), Prentice-Hall, ©1964. x, 310p, tables, diags, refs. 78s. *Prentice-Hall International series in space technology*.

C Describes complete liquid-propellant types of propulsion systems, discussing in considerable detail the inter-related problems of rocket engines, propellant feed, and pressurization systems. Cryogenic propellant controls and the influence of zero gravity conditions are included.

621.6 Fluid Distribution. Pipes. Pumps

PEARSON, G. H. 458
Design of valves & fittings. 2nd ed. Pitman, 1964. xvi, 591p, tables, diags. 4 gns.

B Revised and expanded edition of 1953 includes new chapters on diaphragm valves, steam and air traps, and bolted cover plates. For all concerned with pipework and steam plant.

624 Structural Engineering

VEUBEKE, F. DE ed. 459
Matrix methods of structural analysis. Oxford, NY, [etc], Pergamon P, for Agard, 1964. v, 343p, tables, diags, refs. 100s.

C Edited papers presented at 1962 Agard meeting on subject, contain much information on practical applications and new developments in matrix methods and application on digital computer. Besides detailed considerations of linear structural analysis, by both force and displacement methods, non-linear problems arising from plasticity and large displacements are treated. Emphasis is on aircraft problems, but many techniques described have general applications, and should be valuable to all workers in the field.

628 Public Health Engineering

BARTON, J. J. ed. 460
Heating and ventilating principles and practice. Newnes, 1964. v, 504p, illus, tables, diags. 50s.

A-B Good systematic treatment of the subject, including up-to-date material. All types of heating (other than electric storage) are considered—hot-water, gas, oil, electrical appliances and indirect electrical, and warm-air. Useful practical information on, e.g., valves, insulation, fuel consumption, and running costs.

629.1 Transport Engineering

HARDY, A. C. and TYRRELL, E. 461

Shipbuilding: background to a great industry. Pitman, 1964. xi,200p, plates, tables, diagrs, maps. 50s.

A-B Useful review of the industry suitable for the more intelligent general reader and the student wishing to get general background knowledge of the industry as a whole.

63 Agriculture. Forestry. Livestock. Fisheries

LEONARD, W. H. and MARTIN, J. H. 462

Cereal crops. NY, Macmillan; London, Collier-Macmillan, ©1963. vii,824p, illus, tables, diagrs, maps, refs. 75s.

B-C Broad and practical study of the subject, in particular corn and wheat. Aspects include economic importance, botany, physiology, processed products and utilization, diseases and insect pests. Useful appendix of tables of yields, measures, etc.

PIGGOTT, C. J. 463

Coconut growing. OUP, 1964. ix,109p, illus, tables, diagrs, map, bibliog. 16s. *Oxford tropical handbook*.

A Clear and concise practical manual for growers and plantation managers. Examines briefly world production and trade, and the economics of coconut growing, then deals more fully with scientific production methods and plantation management.

SALMON, S. C. and HANSON, A. A. 464

Principles and practice of agricultural research. Leonard Hill, 1964. xi,384p, tables, bibliog. 75s.

B Written by two US Department of Agriculture research workers, and based on American practice; nevertheless principles are widely applicable. Covers all aspects of agriculture—animal and crop husbandry, horticulture, economics—with sections on statistical methods and research principles in general. Useful formulae and tables of constants, etc., are provided.

65 Business Techniques. Management

WILLIAMS, J. E. D. 465

Operation of airliners. Hutchinson, 1964. viii,352p, plates, tables, diagrs. 4 gns.

B Authoritative review of the technical subjects involved in the operation of modern transport aircraft. Offers a substantial contribution to a better understanding of the inter-relation of these subjects and provides a helpful guide for airline management.

66 Chemical Technology

PYKE, M. 466

Food science and technology. *John Murray*, ©1964. xi,211p, illus, tables, diagrs. 30s.

A Excellent introduction to the science of nutrition. Traditional methods of preservation are discussed first; technology of all the major foods is described in detail, together with the modern processes of canning, quick freezing, freeze-drying, and dehydration. Finally, the social aspects of modern food technology are examined, and future trends predicted. Generously illustrated.

67/68 Manufactures

DOUGLASS, W. A. 467

Braiding and braiding machinery. Eindhoven, Centrex Publishing Co., 1964. x,144p, illus, tables, diagrs. 35s.

B-C Describes braiding machines, their construction, operation, and maintenance; from the simplest maypole machines to the latest high-speed and deflector-type machines; from lace-making braiders to wire, hose-making, and cable-covering machines. Readers should have some knowledge of mechanisms.

SPRATT, H. G. M. 468

Magnetic tape recording. 2nd ed. Temple P, 1964, xiii,368p, illus, tables, diagrs, refs. 3 gns.

B Concentrates on the materials, manufacture, testing, and uses of magnetic tape, and describes the latest developments in techniques and applications which have taken place in the last five years. Not intended as a hi-fi textbook.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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September 1964

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0 SCIENCE AND KNOWLEDGE

02 Librarianship

469

THESAURUS of engineering terms. Prepared by Engineers Joint Council. NY, EJC, 1964. xvii,302p. \$15.

D Contains 10,515 main terms and their cross-reference relationships (80,000 entries). Produced by ten review committees, comprising 130 engineers and other specialists. Includes the EJC system of roles. A valuable book for those using co-ordinate indexing in the engineering field.

5 MATHEMATICS AND NATURAL SCIENCES

CLASON, W. E. *comp.*

470

Elsevier's lexicon of international and national units. English/American, German, Spanish, French, Italian, Japanese, Dutch, Portuguese, Polish, Swedish, Russian. Amsterdam, NY, Elsevier, 1964. 75p, tables, bibliog. 27s. *Elsevier lexica.*

D Compilation of over three hundred unit terms, defined and listed in ten languages. Particularly useful section gives national and local units and their British and metric equivalents, for sixty-nine countries. Invaluable reference work.

DAVIS, K. S. *and* DAY, J. A.

471

Water: the mirror of science. Heinemann, 1964. 195p, illus, plates, tables, diags, maps. 6s. *Science study series.* Paperback. [First pub. USA 1961].

A Wide-ranging survey of the physical, chemical, and biological properties of water. The study explains significance of the unique characteristics of this substance, and, in doing so, discusses the aims, methods, and outlook of science.

51 Mathematics

FADELL, A. G.

472

Calculus with analytic geometry. Princeton (NJ), London, Van Nostrand, 1964. xxviii,705p, tables, diags. 76s. *University series in undergraduate mathematics.*

B Detailed account of the elementary calculus up to partial integration, of matrices and determinants, and of basic analytical geometry, up to polar co-ordinates, presented in modern notation with free use of illustration and analogy.

FULLER, G. *and* PARKER, R. M.

473

Analytic geometry and calculus. Princeton (NJ), Van Nostrand, ©1964. xv,616p, diags. 73s 6d.

B Clearly written textbook covering differential calculus up to partial differentiation, with brief introduction to maxima of functions of two variables, integration up to multiple integrals, and analytical geometry up to conics and elementary properties of quadric surfaces. There are introductory chapters on vectors and infinite series, and many examples.

LIGHTSTONE, A. H.

474

Axiomatic method: introduction to mathematical logic. Englewood Cliffs (NJ), Prentice-Hall, ©1964. x,246p, exercises. 48s.

B Covers the fundamentals of symbolic logic and set theory, the axiomatic method and abstract algebra, propositional calculus, predicate calculus, and the extended completeness theorem. Clearly written, well produced, and easy to follow, with numerous exercises and answers.

MACBEATH, A. M.

475

Elementary vector algebra. OUP, 1964. 127p, diags. 10s 6d.

B Suitable for sixth forms and first-year undergraduates. Based on a geometrical definition of a vector, and carrying the theory as far as scalar and vector products. Applications are made to geometry of two and three dimensions and to spherical trigonometry.

- MONTAGUE, F. H. and MONTGOMERY, M. D. 476
 Significance of mathematics. London, Prentice-Hall; Ohio, Merrill Books, [1964]. xi,290p, tables, diagrs, index. 54s.

A Designed for the non-mathematical student who is not studying a science subject, this book presents mathematics as a search for patterns, a way of thinking (by emphasizing its logical structure), part of our cultural heritage (a brief account of its historical development), and as a working tool.

- REICHMANN, W. J. 477
 Calculus explained. Methuen, 1964. viii,331p, diagrs. 36s.

A Introduction to the basic ideas and methods of elementary calculus from first principles to simple differential equations. Intended as an explanation of what the calculus is about, and how it is used, rather than as a textbook, it is a useful and readable work.

52 Astronomy. Surveying. Geodesy

- MESSEL, H. and BUTLER, S. T. eds. 478
 Space physics and radio astronomy. Macmillan, 1964. 174p, illus, diagrs, refs. 1 gn.

A-B Techniques for investigating distant stars and galaxies; radio astronomy, stellar interferometry, meteor astronomy, the Van Allen belt and the Aurora. Introduction to the physics of flight and artificial satellites. Based on lectures given at the third Nuclear Research Foundation summer school in Australia.

53 Physics

- BARKER, J. R. 479
 Mechanical and electrical vibrations. London, Methuen; NY, Wiley, 1964. vi,221p, diagrs, refs. 1 gn. *Methuen's monographs on physical subjects*.

B Integrated study comparing and relating fundamental ideas of mechanics and electricity through mathematically based analogies. A useful guide to the important topics of the formulation of problems in mathematical terms and in interpreting formulae in physical terms.

- BLEULER, E. and HAXBY, R. O. eds 480
 Electronic methods. NY, London, Academic P, 1964. xii,839p, tables, diagrs, refs. 171s 6d. *Methods of experimental physics*, vol. 2.

B-C Useful reference manual for research workers who design electronic equipment. Sections on networks, vacuum tubes, semiconductor devices, amplifiers, oscillators, non-linear circuits, servomechanisms and feedback measurements, microwaves, photoelectric devices, cathode-ray tubes, and noise. Bibliographies in each chapter give details of the more complex of specialized circuits.

- BROUWER, W. 481
 Matrix methods in optical instrument design. Amsterdam, NY, Benjamin, 1964. xi,290p, tables, diagrs, refs. \$9.00; \$5.95 paper. *Lecture notes and supplements in physics*.

B Undergraduate-level text exploring the behaviour of a wide variety of optical instruments and components with the aid of matrix algebra supplemented by geometrical optics and calculus. Suitable also for science students and research workers.

- DEVELOPMENTS in applied spectroscopy. Vol. 3. Proceedings of the Fourteenth Annual Mid-America Spectroscopy symposium, Chicago, May 20-23, 1963. Ed. by J. E. Forrette and E. Lanterman. NY, Plenum P, for the Chicago Section of the Society for Applied Spectroscopy, 1964. ix,409p, plates, tables, diagrs, refs. \$17.50.

C Valuable survey of recent research in the field, contained in thirty-two papers on X-ray, infra-red, Raman and ultraviolet spectroscopy, emission spectrography, NMR and ESR, and gas chromatography. Has numerous illustrations and references, but lacks an index.

- FREDRICKSON, A. G. 483
 Principles and applications of rheology. Englewood Cliffs (NJ), Prentice-Hall, ©1964. x,326p, illus, tables, diagrs, bibliogs. 78s. *Prentice-Hall International series in the physical and chemical engineering sciences*.

B Introductory course for engineers and chemical engineers by associate professor of chemical engineering at the University of Minnesota, dealing primarily with the underlying theory and the mathematical techniques required. Applications are treated essentially from the theoretical and design angle.

- GROSZKOWSKI, J. 484
Frequency of self-oscillations. Warsaw, PWN—Polish Scientific Publishers; Oxford, NY, [etc], Pergamon P, 1964. xi, 530p, diags, bibliog. 100s.
C Theoretical study of electric oscillators, with emphasis on stabilizing the frequency. Mainly valve systems although some transistor ones are included. Oscillators using LC-circuits and electromechanical elements such as magnetostrictive and piezoelectric resonators are discussed in detail, but RC phase-shift oscillators and relaxation oscillators are also included. There is a seventy-six-page bibliography, arranged chronologically.
- KOSHLYAKOV, N. S., SMIRNOV, M. M. and GLINER, E. B. 485
Differential equations of mathematical physics. Tr. by Scripta Technica Inc., tr. edited by H. J. Eagle. Amsterdam, North-Holland, 1964. xvi, 701p, diags, refs. 120s.
C Comprehensive treatment of differential equations with emphasis placed on their physical applications. Divided essentially into four parts dealing with hyperbolic, elliptic, and parabolic equations, and with supplementary material such as generalized functions and integral transforms.
- RAETHER, H. 486
Electron avalanches and breakdown in gases. Butterworths, 1964. ix, 191p, illus, tables, diags, refs. 60s. *Butterworths advanced physics series*.
C Up-to-date survey of our knowledge of electron avalanches and their part in the Townsend and streamer mechanisms of electrical breakdown. Experimental techniques for investigating single and multiple avalanches described briefly; results and theory, including unpublished work from the author's research school, discussed at length. For graduates and research workers.
- SANDFORT, J. F. 487
Heat engines: thermodynamics in theory and practice. Heinemann, 1964. xxiv, 292p, diags. 10s 6d. *Science study series*. Paperback. [First pub. 1962].
A Gives the general reader an elementary understanding of the first and second law of thermodynamics, the significance of temperature, and the principle of the reversible heat engine. Describes development of the steam engine in the early theoretical work of Carnot, Joule, Clausius, and Thompson.
- TRIGG, G. L. 488
Quantum mechanics. Princeton (NJ), London, [etc], Van Nostrand, ©1964. xii, 395p, tables, diags. 76s. *University physics series*.
C Strongly mathematical exposition with emphasis on the theory of operators in Hilbert space, using Dirac notation. Non-relativistic applications include the theory of angular momentum, time-independent and time-dependent perturbation theory, identical particles, and scattering theory. Dirac electron theory is discussed, and brief introduction to field quantization given.
- 539.1 Nuclear Physics**
- NEWTON, R. G. 489
Complex j-plane: complex angular momentum in nonrelativistic quantum scattering theory. NY, Amsterdam, Benjamin, 1964. viii, 235p, diags, refs, bibliog. \$9.90 cloth; \$5.45 paper. *Mathematical physics monograph series*.
C Intended for graduate students and research workers in physics and applied mathematics, and as a supplement for courses on quantum theory of scattering, high-energy physics, quantum theory, and electromagnetic theory. Advanced work calling for familiarity with theory of functions of a complex variable and some knowledge of ordinary linear differential equations. Includes four reprints from Phys. Rev. and Proc. Phys. Soc.
- WHITE, H. E. 490
Introduction to atomic and nuclear physics. Princeton (NJ), Van Nostrand, ©1964. x, 560p, illus, plates, tables, diags. 76s.
B Clearly written text by well-known American authority, relating subject, including many of the most recent discoveries and techniques, to the elementary laws of physics. Only algebra and trigonometry are required for use by 'A'-level students in physics and chemistry, or those requiring a fairly detailed introduction at this level.

54 Chemistry

- COOK, Sir J. and CARRUTHERS, W. eds 491
Progress in organic chemistry 6. Butterworths, 1964. vii,256p, tables, diags, refs. 57s 6d. *Butterworths progress series.*
B-C Six articles by experts review a varied range of topics in which there has been appreciable progress during recent years. Topics include vegetable tannins, bisbenzylisoquinoline alkaloids, natural polyacetylenes, phenoxazones, carbenes, and molecular orbital studies of reaction rates and equilibria. Well documented. Primarily for research workers and teachers.
- LADD, M. F. C. and LEE, W. H. 492
Practical radiochemistry. Cleaver-Hume in assoc. with Macmillan, 1964. xii,135p, tables, diags, refs. 18s 6d.
A-B Well-written, selective, brief account suitable for an introductory course. About half the contents deals with background such as radioactivity, interaction of radiation with matter, safety precautions, and counters and other equipment. Remainder describes the use of such equipment, especially in twenty selected experiments involving radioisotopes.
- NESMEYANOV, A. N. 493
Selected works in organic chemistry. Tr. from the Russian by A. Birron and Z. S. Cole, tr. edited by D. P. Gelfand. Oxford, NY, [etc], Pergamon P; Jerusalem, Jerusalem Academic P, 1963. xvi,1172p, tables, diags, refs. 200s.
C Compression of four volumes originally published in Moscow in 1959, embracing all the author's published work since 1929. Review papers and miscellaneous articles have been omitted, and the remainder divided into three sections: organometallic chemistry, chemistry of elemento-organic compounds, and investigations in organic chemistry.
- TOPCHIEV, A. V. ed. 494
Radiolysis of hydrocarbons. English ed. edited by R. A. Holroyd. Amsterdam, NY, Elsevier, 1964. xii,232p, tables, diags, refs. 65s.
C Contains a detailed and specialized account of work—carried out principally in the USSR—on the radiation-induced decomposition of saturated hydrocarbons both in the liquid and solid states. Special aspects covered include the radiolysis of hydrocarbons absorbed on oxide catalysts, energy transfer, and radiation-thermal cracking. Particular attention is paid to statistical methods for developing a unified theory of hydrocarbon radiolysis which will explain quantitatively the various mathematical relationships observed experimentally.
- WOLFENDEN, J. H., RICHARDS, R. E. and RICHARDS, E. E. 495
Numerical problems in advanced physical chemistry. 2nd ed. Oxford, Clarendon P, 1964. xvi,259p, tables, diags. 30s.
B Despite an interval of over twenty-five years, many of the problems based on and taken from very well selected original papers have been retained with some modification, and fifty new problems and some examination questions have been added. Excellent selection, presentation, and discussion. This book should find wide favour with students and teachers working to university final honours degree, or equivalent level.
- 55 Geology. Meteorology**
- FRASER, R. 496
Habitable earth. Line drawings by J. Worsley. Hodder & Stoughton, 1964. 151p, plates, tables, diags, maps. 30s.
A Up-to-date survey of facts and theories concerning composition and evolution of the earth, its plastic nature. Methods and instruments of measurement and occasions of discoveries; mechanics of mountain building, continental drift, volcanic activity, ocean currents, winds; their relevance to man's exploitation. Information in sufficient detail for a textbook is brought to life for the general reader.
- PICKARD, G. L. 497
Descriptive physical oceanography: an introduction. Oxford, NY, [etc], Pergamon P, 1964. viii,199p, tables, diags, maps, refs. 25s.
B Well-presented and much-needed introductory text suitable for the undergraduate. Deals with the synoptic aspects of physical oceanography, and is a companion volume to 'Dynamical oceanography' by R. W. Burling.

SHAW, D. M. *ed.* 498
Studies in analytical geochemistry. University of Toronto P, in co-operation with the Royal Society of Canada, 1963 [i.e. June 1964]. vii, 139p, tables, diags, refs. \$5.95. *Royal Society of Canada special publications series.*

C The original papers constituting this symposium may not cover the whole field of modern geochemistry, but they do indicate something of the scope, technique, and philosophy of the science. There is informed discussion of the application and value of trace-element analysis in the study of ancient environments and processes, the natural abundance variation of the stable-isotopes of sulphur and oxygen, the geochemistry of fluorine, the quantitative approach to the problems of granite terrains, and statistical inference in geochemical work generally.

THRANE, E. *ed.* 499
Electron density distribution in ionosphere and exosphere: proceedings of the NATO Advanced Study Institute, Norway, 17-26 April 1963. Sponsored by NATO Science Committee and Norwegian Defence Research Establishment. Amsterdam, North-Holland, 1964. vii, 395p, illus, tables, diags, refs. 80s.

C Up-to-date compendium of experimental results by radio propagation, rocket and satellite measurements of electron densities in all regions of the ionosphere in a wide variety of conditions. Primarily of specialist interest in the field of ionospheric processes and radio propagation studies.

TYUTYUNOV, I. A. 500
Introduction to the theory of the formation of frozen rocks. Tr. from the Russian by J. O. H. Mulhaus, tr. edited by N. Rast. Oxford, NY, [etc], Pergamon P, 1964. xiv, 94p, tables, diags, refs. 50s. *International series of monographs on the earth sciences, vol. 6.*

C This monograph is written by an acknowledged Russian expert on the subject. It discusses the theoretical background of rock weathering and the formation of superficial structures under permafrost conditions within framework of a comprehensive physico-chemical theory of cryogenesis.

57 Anthropological and Biological Sciences

CLARK, J. M. *ed.* 501
Experimental biochemistry. San Francisco, London, Freeman, ©1964. ix, 228p, tables, diags, refs. 30s. *Series of books in chemistry.*

B Course is designed, tested, and improved by the staff of the Biochemistry Division of the University of Illinois as a general course. The material is well selected and presented with twenty-eight experiments ranging widely. Background information, experimental details, questions, and selected references are given with each experiment.

CROW, W. B. 502
Synopsis of biology. 2nd ed. Bristol, John Wright, 1964. xx, 1056p, diags. 52s 6d.

D Some economies have been made to lower the price of this edition, but these do not alter the scope of the book which, intended primarily for upper-school students, should also be helpful to degree students.

FRGD, E. B. 503
Ecological genetics. London, Methuen; NY, Wiley, 1964. xv, 335p, plates, tables, diags, bibliog. 2 gns.

C Lucid account of the study of natural populations, mainly animal, based largely on the author's own extensive laboratory and field work. Polymorphism, mimicry, isolation, and adaptation are discussed by reference to populations in the field.

LEHNINGER, A. L. 504
The mitochondrion: molecular basis of structure and function. NY, Amsterdam, Benjamin, 1964. xx, 263p, illus, tables, diags, refs. \$9.90.

C A comprehensive, but not exhaustive, summary and digest of present-day knowledge of this subcellular particle. Of interest to research workers in cell physiology, cytology, molecular biology or biochemistry. Well illustrated with bibliography.

- OVENDEN, M. W. 505
 Life in the universe: a scientific discussion. Heinemann, 1964. 159p, illus, diags. 5s. Paperback. [First pub. 1961].
 A Recent discoveries in biology, chemistry, and physics which provide clues to the possibilities of life in the solar system and beyond. The physical conditions on Mars, Jupiter, and Saturn are considered and the likelihood of similar conditions on the planets of other stars.
- SEARS, P. B. 506
 Biology of the living landscape. A & U, [1964]. 176p, index. 1 gn. [First pub. USA 1962].
 A Simple introduction to the subject of ecology by Professor Emeritus of Yale University and past president of the American Association for the Advancement of Science, who believes that a widespread knowledge of the subject is essential to effective planning.
- SOKAL, R. R. and SNEATH, P. H. A. 507
 Principles of numerical taxonomy. San Francisco, London, Freeman, ©1963. xvi, 359p, tables, diags, refs. 60s. *Series of books in biology*.
 C First general introduction to this subject. Starting with a critique of current taxonomy, it goes on to deal with new methods which have been made practicable by wide use of computers. There is a chapter on the constitution of a taxonomic system and an almost exhaustive bibliography.
- SWANSON, C. P. 508
 Cell. Ill. by F. Cooper. 2nd ed. Englewood Cliffs (NJ), Prentice-Hall, ©1960, 1964. x, 118p, illus, diags, index. 12s 6d. *Foundations of modern biology series*.
 A-B Short, well-written and well-illustrated text on the cellular basis of life. Considers the tools and techniques of cytology, cell structure, extra-cellular substances, comparative cytology, cell division, meiosis and sexual reproduction, and cell development.
- WHITTINGHAM, C. P. 509
 Chemistry of plant processes. Methuen, 1964. 209p, plates, tables, diags, refs. 25s. *Methuen's monographs on biological subjects*.
 B Text is in two parts, cellular metabolism and plant processes, the latter being a summary of the more classical topics in plant physiology; there is no attempt to link these two aspects of the subject. The first part is more detailed and probably more useful than the second. Includes twelve-page appendix very briefly summarizing some of the chemistry of the constituents of organisms.

59 Zoology

- WILBUR, K. M. and YONGE, C. M. eds 510
 Physiology of mollusca. Vol. 1. NY, London, Academic P, 1964. xiii, 473p, illus, tables, diags, refs. 114s 6d.
 B-C First comprehensive survey in forty years of the voluminous and scattered literature on the subject, broadly interpreted. Outlines current views on basic structure, classification, and evolution; deals not only with growth, reproduction, osmotic-ionic regulation, muscle, nerve, and special effectors, but also with physiological aspects of ecology, buoyancy, locomotion, development, and larva culture. Carefully edited, well written, clearly illustrated, fully documented, and comprehensively indexed.

6 APPLIED SCIENCES

621 Mechanical and Electrical Engineering

- CHAPMAN, W. A. J. 511
 Problems in workshop calculations (intermediate). 2nd ed. Arnold, 1964. viii, 163p, tables, diags. 8s 6d.
 B Previous edition 1958, revised and enlarged with new sections on logarithms. For students of the general course in engineering and in both parts of the City and Guilds No. 193 Mechanical Engineering Craft Course, Part 1 of City and Guilds (No. 293) Mechanical Technicians and comparable courses.

621.039 *Nuclear Engineering*

MARCHUK, G. I. *ed.* 512

Theory and methods of nuclear reactor calculations. Authorized translation from the Russian. NY, Consultants Bureau, 1964. viii, 199p, tables, diags, refs. 286s.

C Originally published in Moscow, 1962. Collection includes recent Russian work on various aspects of the theory and methods of designing nuclear reactors, with emphasis primarily on neutron transport theory and neutron resonance capture. For nuclear physicists.

621.3 *Electrical Engineering*

SPURWAY, M. A. 513

Installation and maintenance of industrial transformers. Newnes, 1964. 110p, illus, tables, diags. 10s 6d. *Newnes practical handbook*.

A Clearly presented and practical, written by qualified engineer, suitable for the general reader and particularly for those dealing with the care of transformers in industrial situations or those training to be works engineers.

621.7 *Workshop Practice*

CHURCHILL, S. C. 514

Soldering and brazing technology. Part 1, soldering; part 2, brazing. Brighton, Machinery Publishing Co., [1964]. 147p; 151p, illus, tables, diags, bibliogs. 25s per vol. *Machinery's standard reference series*.

B Provides information on the origin, nature, and properties of the metals from which soft-solder and brazing alloys are made, including a detailed description of various processes for a wide range of metals and conditions in which soldered or brazed joints will serve. Valuable reference work.

628 *Public Health Engineering*

HAWKES, H. A. 515

Ecology of waste water treatment. Oxford, NY, [etc], Pergamon P, 1963. ix, 203p, plate, tables, diags, refs. 2 gns.

C Valuable information, presented in an informal and pleasant style, but difficult for the non-biologist to understand because of the technical words used.

629.1 *Transport Engineering*

BENNETT, A. J. S. 516

Ship fire prevention. Oxford, London, [etc], Pergamon P; NY, Macmillan, ©1964. xvii, 157p, illus, tables, diags. 1 gn. *Commonwealth and international library of science, technology, engineering, and liberal studies*.

E Written by a marine engineer for Merchant Navy personnel, this is an excellent textbook in conjunction with practical training in firefighting. Should also be useful to fire-service staff in ports.

SECKEL, E. 517

Stability and control of airplanes and helicopters. NY, London, Academic P, ©1964. xv, 506p, illus, tables, diags, bibliog. 107s 6d.

B-C Comprehensive account of aircraft flying qualities in relation to the human pilot. Emphasis on physical interpretation, and mathematical exposition therefore condensed in many sections although basic principles always given. A valuable complement to the few books existing on this subject. Unusual in dealing with rotating as well as fixed wing aircraft. Includes data on seven US aircraft, operational and experimental.

63 *Agriculture. Forestry. Livestock. Fisheries*

BYERLY, T. C. 518

Livestock and livestock products. Englewood Cliffs (NJ), Prentice-Hall, ©1964. ix, 422p, tables, diags, maps, refs. 60s.

B Livestock products and breeding, feeding, and health of farm animals are usefully, though necessarily somewhat superficially, treated; brief lists, variable in quality, of key references are given at frequent intervals throughout the text.

- JONES, F. G. W. *and* JONES, M. G. 519
Pests of field crops. Arnold, 1964. viii,406p, plates, tables, diagrs, refs. 50s.
B Covers the whole range of animal pests of British field crops, with chapters on pests of stored grain, methods of control, and pesticides. Intended for students in agricultural colleges and universities. Well illustrated and of a high general standard.
- 67/68 Manufactures**
- COCKETT, S. R. 520
Dyeing and printing. Pitman, 1964. ix,113p, illus, diagrs, bibliog. 17s 6d.
Pitman's common commodities and industries series.
A-B Introductory text, with chapters on history, preparation of fibres, dyeing, printing, machinery and processes, and quality control. Emphasis on principles, processes, and machinery (well illustrated) rather than on chemistry. Elementary, but useful, e.g., for students specializing in related subjects.
- FISHER, E. G. 521
Extrusion of plastics. 2nd ed. London, Iliffe, for the Plastics Institute; NY, Interscience, 1964. 8,271p, plates, diagrs, refs. 65s.
B Recent advances in extrusion technology have been considerable and the second edition is more than twice as long as the first. The book is primarily intended as a recommended textbook for students taking the professional examinations of the Plastics Institute, but would also be useful to plastics technologists.
- 522
GUIDEBOOK to man-made textile fibres and textured yarns of the world. 2nd ed. NY, United Piece Dye Works, 111 West 40th St, 1964. 193p. \$5.
D Gives in digest form, information about 1,200 fibre trademarks and trade designations, plus data on textured yarns and woven stretch fabrics. Arranged by trademark, FTC generic class, and by source, with full addresses of companies. A well-arranged directory.
- 681 Precision Mechanisms**
- MEE, C. D. 523
Physics of magnetic recording. Amsterdam, North-Holland, 1964. xv,270p, plates, tables, diagrs, refs. 60s.
B Deals with the principles of practical magnetic recording including the use of zero, d.c. and a.c. bias, preparation and properties of magnetic tape, wide-band high-resolution systems, and the reproduction process.
- SAFFOLD, R. *and* SMALLEY, A. 524
Slide rule. EUP, 1964. x,467p, diagrs. 30s. *Tutortext.*
A Designed for the self-teaching student who starts without knowledge of logarithms or trigonometry, this is the British edition of an American course based on Norman Crowder's technique of branched programming.
- STEIN, M. L. *and* MUNRO, W. D. 525
Computer programming: a mixed language approach. NY, London, Academic P, xiv,459p, tables, diagrs. 88s.
B Designed for the professional and non-professional computer user. Deals with general programming theory and machine organization. Three kinds of programming language are described, absolute, symbolic, and problem oriented (Fortran). The course is designed round the CDC 1604 computer (little known in the UK), but this should not detract from the value of the book.
- 69 Building Industry**
- DIAMANT, R. M. E. 526
Industrialised building: 50 international methods. By R. M. E. Diamant in collab. with *The Architect & Building News*. Iliffe, 1964. 9,214p, illus, plans, diagrs. 3 gns.
A-B Heavily illustrated look at system building using fifty examples from Great Britain, France, Holland, Scandinavia, the USA, and eastern Europe. Based on a series of articles which appeared in *The Architect & Building News*.
- VALLINGS, H. G. 527
Mechanisation in building. CR Books, 1964. 95p, plates, tables, refs. 35s.
C Guide for building contractors on methods of increased mechanization, ranging from partial mechanization to completely industrialized building. Photographs and detailed information about available plant, performance and application, and calculation of comparative operating costs are included.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

Subject Index

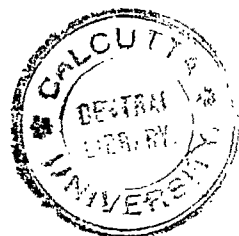
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- Yonge, C. M. ed. 510

Aslib Book List



A MONTHLY LIST OF RECOMMENDED
SCIENTIFIC AND TECHNICAL BOOKS
with annotations

VOLUME 29 NUMBER 10

October 1964

Entries 528-584

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ASLIB BOOK LIST VOL. 29 NO. 10 OCTOBER 1964

Preface

Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

The place of publication is London unless otherwise stated.

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Aslib Book List

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0 SCIENCE AND KNOWLEDGE

COOPER, B. M.

528

Writing technical reports. Penguin Books, 1964. 188p, tables, diagrs, index, bibliog. 3s 6d. *Pelican original*. Paperback.

A-B The author, who is head of the department of liberal studies at a technical college, is concerned with report writing as a means of communication as much as a statement of information. There is material on structure, grammar and punctuation, choice of vocabulary, style, and avoidance of jargon; illustrated by examples.

01 Bibliography

529

BIBLIOGRAPHY of proceedings of international meetings held in 1958, vol. 2. Prepared and published by Union of International Associations, 1964. 400p. Paperbound \$8; 45s. Clothbound \$10; 55s.

A This annual bibliography, arranged in date order of meeting, includes full references (title, sponsoring body, place, publication details, notes on contents of proceedings, nature of participation, location and dates of previous and subsequent meetings) to the published proceedings of 1,180 international conferences, assemblies, etc. The volume includes references to material published up to and including 1963. This series by the UIA with financial assistance of the USA National Science Foundation is an important tool in the very difficult control of international conferences.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

BOURGIN, D. G.

530

Modern algebraic topology. NY, Macmillan; London, Collier-Macmillan, ©1963. xii, 544p, diagrs. 4 gns.

C An up-to-date text for those beginning postgraduate work in this field; a little knowledge of modern algebra and set-theory will help the novice. Proofs are given in detail and there are carefully chosen exercises. The scope includes spectral sequences and sheaf theory.

HAMMERSLEY, J. M. and HANDSCOMB, D. C.

531

Monte Carlo methods. Methuen, 1964. 178p, tables, index, 25s.

B Comprehensive and compact review of an important branch of modern statistical work; general principles are supported by an extensive bibliography and illustrated by applications in many fields.

532

HANDBOOK of mathematical tables. Supplement to handbook of chemistry and physics. 2nd ed. Ed. by R. C. Weast, S. M. Selby, and C. D. Hodgman. Cleveland (Ohio), Chemical Rubber Co., ©1964. x, 680p, tables, diagrs, index. 75s.

D This handbook has evolved from the mathematical tables contained in 'Hodgman', the handy reference tool used by chemists and physicists in laboratories all over the English-speaking world. In this second edition certain sections, especially the one on numerical techniques, have been extended. The usefulness of this essentially practical compendium is indicated by the fact that the new edition has followed the first within two years.

JACOBSON, N.

533

Lectures in abstract algebra: vol. III, theory of fields and Galois theory. Princeton (NJ), London, [etc], Van Nostrand, ©1964. xi, 323p, tables, index. 76s. *University series in higher mathematics*.

C Completing an outstanding treatise, this volume deals with field theory as applied to the classical Galois problems and as a basis for modern work in algebraic number theory and algebraic geometry. For students working for an honours degree or beginning research, and an essential item for any mathematical library.

- 534
 NONLINEAR integral equations: proceedings of an advanced seminar conducted by the Mathematics Research Center, United States Army, at the University of Wisconsin, Madison, April 22-24, 1963. Ed. by P. M. Anselone. Madison, U of Wisconsin P, 1964. xii, 378p, tables, diags, refs. \$6.50.
 C Seminar papers arranged to present a good introduction to this developing, important, and somewhat difficult topic. The general survey by Wouk and the section on numerical methods of solution by Noble are particularly noteworthy.
- PERVIN, W. J. 535
 Foundations of general topology. NY, London, Academic P, 1964. 209p, bibliog, index. 3 gns.
 C Comprehensive treatment of point-set topology, starting with an outline of set theory and proceeding from the general case of a topological space to the complete metrical space, continuing with a discussion of product spaces, function and quotient spaces, and uniform spaces. Proofs are detailed, and there are numerous exercises.
- ROGERS, C. A. 536
 Packing and covering. CUP, 1964. viii, 111p, tables, index, bibliog. 30s. *Cambridge tracts in mathematics and mathematical physics*.
 C A terse, clear account of recent research work, much of it due to Professor Rogers himself, mainly concerned with formulae for estimating packing and covering densities in space of n dimensions.
- 53 Physics**
- HUNT, J. N. 537
 Incompressible fluid dynamics. Longmans, 1964. viii, 127p, table, diags, bibliog. 1 gn. *Mathematical physics series*. Paperback.
 B Good monograph dealing with the basic problems of real fluids, eminently suitable for the final year undergraduate or teacher. The questions at the end of each chapter and bibliography are useful additions.
- KILMISTER, C. W. 538
 Hamiltonian dynamics. Longmans, 1964. ix, 146p, diags, bibliog. 25s. *Mathematical physics series*. Paperback.
 B Introductory text on analytical mechanics and, in particular, the equations of motion due to Lagrange and Hamilton. Theory and applications are given and there are examples and problems. Suitable for undergraduates reading mathematics, physics, or mathematical physics.
- STREATER, R. F. and WIGHTMAN, A. S. 539
 PCT, spin and statistics, and all that. NY, Amsterdam, Benjamin, 1964. viii, 181p, diags, bibliog. \$9.00 cloth; \$4.95 paper. *Mathematical physics monograph series*.
 B Gives recent advances in the foundations of relativistic quantum field theory including their mathematics, which covers transformation laws, the reconstruction theorem, and a number of other closely associated approaches to the subject. Outstanding are the two chapters on 'Fields and vacuum expectation values' and 'Some general theorems of relativistic quantum field theory'. Excellent for undergraduate physics students and those more senior.
- 537 Electricity**
- FRUMKIN, A. N. ed. 540
 Surface properties of semiconductors. Tr. from the Russian by A. Tybulewicz. NY, Consultants Bureau, 1964. 171p, tables, diags, refs. \$22.50.
 C Collection of papers mainly devoted to the effects the state of a surface has upon the electrical properties. The scope is wide, extending from chemical adsorption mechanisms to effects of chemical treatments upon electrical device parameters. For research workers in the fields of surface states and devices.
- 539.1 Nuclear Physics**
- BROWN, G. E. 541
 Unified theory of nuclear models. Amsterdam, North-Holland, 1964. viii, 178p, tables, diags, index, bibliog. 40s.

B The many aspects of the nuclei of matter can be 'visualized' in different ways and 'models' have been devised for explaining their physics. These are the shell, collective, and optical models and this book gives a unified treatment of the three, based on the Hartree-Fock mathematical techniques formulated in the language of occupation number space. The book is mainly mathematical and is for physicists.

FREMLIN, J. H. 542

Applications of nuclear physics. EUP, 1964. xii,340p, plates, tables, diagrs, index, bibliog. 25s. *Physical science texts*.

B A textbook on the principles, methods, and applications of nuclear physics for ordinary degree students in physics and for postgraduates in radiobiology, radiochemistry, geology, and related fields. Useful also for hospital physicists. Gives much experimental data and is non-mathematical. An excellent introductory presentation.

WOODS, L. C. 543

Introduction to neutron distribution theory. London, Methuen; NY, Wiley, 1964. xii,132p, diagrs. 28s. *Methuen's monographs on physical subjects*.

B Introductory survey of the mathematical techniques used for the calculation of the energy and spatial distributions of neutrons in nuclear reactors. For research workers and post-graduate students of nuclear engineering and those with some previous knowledge of the subject.

54 Chemistry

AMERICAN CHEMICAL SOCIETY 544

Boron-nitrogen chemistry: an international symposium sponsored by US Army Research Office - Durham at Duke University, April 23-25, 1963. Washington, The Society, 1964. x,330p, tables, diagrs, refs. \$7.50. *Advances in chemistry series 42*.

C Collection of thirty-two papers submitted at a recent symposium dealing with the synthetic, kinetic, spectral, and theoretical advances in this specialized field. Particularly suitable for research workers.

CRAIG, H., MILLER, S. L. and WASSERBURG, G. J. eds. 545

Isotopic and cosmic chemistry. Dedicated to Harold C. Urey . . . Amsterdam, North-Holland, 1964. xxv,553p, tables, diagrs, refs. 108s.

C This Festschrift, on the occasion of the seventieth birthday of the discoverer of deuterium and the great pioneer of isotopic chemistry, naturally ranges widely, Urey being the broad scientist he is. It contains thirty-two papers on developing areas in chemistry, biochemistry, geochemistry, and astrochemistry, contributed by leading experts. A fascinating picture of recent experiment and theory in the application of the newer techniques of chemistry and physics for the earth, life, and space sciences.

DAVIES, C. N. 546

Recent advances in aerosol research: a bibliographical review. Oxford, NY, [etc], Pergamon P, 1964. ix,80p, refs. 30s.

C A review of the purely scientific literature on aerosols in the true sense, published during the period 1957-62. Essentially a book for the pure scientist working in this field: not a book on pressurized packaging.

EDWARDS, J. O. 547

Inorganic reaction mechanisms: an introduction. NY, Amsterdam, Benjamin, 1964. xii,190p, tables, diagrs, refs. \$7.00. *Physical inorganic chemistry series*.

E An excellent book for the senior undergraduate or postgraduate who requires an all-round introduction to the subject. In a scholarly and enlightening way, it applies the general background of mechanistic and kinetic knowledge to the specific problems encountered in inorganic systems.

FUCHS, N. A. 548

Mechanics of aerosols. Tr. from the Russian by R. E. Daisley and M. Fuchs. Oxford, NY, [etc], Pergamon P, 1964. xiv,408p, tables, diagrs, indexes. 120s.

B Deals with the nature of aerosols and the main types of motion of different kinds of aerosol particles, with the coagulation of aerosols, and the dispersal of powders as aerosols. The treatment is quantitative, but the mathematical techniques are generally simplified for ready application to practical problems. The translation is in essence based on the Russian first edition of 1955, with some additions.

JOLLY, W. L. 549
Inorganic chemistry of nitrogen. NY, Amsterdam, Benjamin, 1964. xi,124p, tables, diagrs, refs. \$5.75. *Physical inorganic chemistry series*.

B Lucid collection of data on nitrogen and its inorganic compounds, with a systematic treatment of their structures and reaction kinetics, and up-to-date interpretation of the mechanisms; suitable for advanced university inorganic chemistry course.

ROBERTS, J. D. and CASERIO, M. C. 550
Basic principles of organic chemistry. NY, Benjamin, 1964. xxv,1315p, diagrs, index. \$15.30.

B Important text for degree and equivalent courses by a leading American authority which should influence the teaching of the subject. The presentation is built solidly on a modern theoretical background as regards structure and mechanism, and makes use of modern techniques, especially the evidence provided by thermochemistry and spectroscopy.

RODIGUIN, N. M. and RODIGUINA, E. N. 551
Consecutive chemical reactions: mathematical analysis and development. Tr. from the Russian by Scripta Technica Inc. Ed. by R. F. Schneider. Princeton (NJ), Van Nostrand, [1964]. ix,136p, tables, diagrs, refs. 39s.

C Deals specifically with the operator method of solution of the systems of differential equations that have been developed for the analysis of consecutive reactions. The treatment is general and capable of application to any number of reaction stages as well as to reactions which include reversible, consecutive, and chain properties in different combinations. For research chemists.

SHOPPEE, C. W. 552
Chemistry of the steroids. 2nd ed. Butterworths, 1964. viii,483p, tables, diagrs, refs, index. 85s.

C Comprehensive account of sterols, bile acids, sex hormones, adrenocortical hormones, cardiotonic glycosides, saponins, sapogenins, and azasteroids; over two thousand references. Structures, reactions, and syntheses are detailed. Useful source book for specialists in this field.

548 Crystallography

KRÖGER, F. A. 553
Chemistry of imperfect crystals. Amsterdam, North-Holland, 1964. xvi,1039p, tables, diagrs, refs. 220s.

C Detailed authoritative account for chemists and physicists of the nature, interaction, and modern equilibrium theory of native and foreign imperfections in crystalline elements, halides, oxides, sulphides, and other compounds; with chapters on controlled growth, sintering, tarnishing, electro-chemistry, and photolysis. Comprehensive up-to-date references.

VAINSHTEIN, B. K. 554
Structure analysis by electron diffraction. Tr. and ed. by E. Feigl and J. A. Spink. Oxford, NY, [etc], Pergamon P, 1964. ix,420p, plates, tables, diagrs, index. 100s.

C Detailed theory for specialists of the geometry and intensity of electron diffraction by solids (both dynamic and kinematic scattering), and of Fourier methods of synthesis. Some results are given of recent investigations of the structure of basic salts, metal nitrides and carbides, semiconducting alloys, clays, and the location of hydrogen atoms. Comprehensive references.

55 Geology. Meteorology

TAGG, G. F. 555
Earth resistances. Newnes, 1964. viii,258p, plates, tables, diagrs. 55s.

B Useful synthesis of basic theory and fundamentals of interest to electrical and civil engineers, archaeologists, and geophysicists with chapters on resistivity surveying, measuring instruments, and much information on the design of earth electrodes.

57 Anthropological and Biological Sciences

BOURNE, G. H. ed. 556
Cytology and cell physiology. 3rd ed. NY, London, Academic P, 1964. xvii, 780p, illus, tables, diagrs, refs. 143s.

C Retains much of historical value and includes many new articles, covering particularly the advance in ultrastructural studies since the previous edition in 1952. Majority of the articles discuss the literature up to 1962.

557

PRIMITIVE motile systems in cell biology: proceedings of a symposium on the mechanism of cytoplasmic streaming, cell movement, and the saltatory motion of subcellular particles, held at Princeton University, April 2-5, 1963. Ed. by R. D. Allen and Noburo Kamiya. NY, London, Academic P, 1964. xix, 642p, illus, plates, tables, diagrs, refs. 157s.

C Cytoplasmic streaming in plants, myxomycetes, and a wide variety of amaebsae is covered in articles by all the main workers in these fields. Although mitosis and the movement of subcellular particles are treated less fully, several valuable papers are included.

577.1 Biochemistry

FLORKIN, M. and STOTZ, E. H. eds. 558

Comprehensive biochemistry. Vol. 15, group-transfer reactions. Amsterdam, NY, [etc], Elsevier, 1964. xii, 246p, tables, diagrs, refs. 70s.

C Advanced treatise by experts. The six articles deal with biological transmethyations and related reactions depending on tetrahydrofolic acid, transketolase and transaldolase, acyl and glycolyl transfer reactions, vitamin B₆ function in transamination and decarboxylation reactions, and with phosphate group transfers. Fully documented.

58 Botany

DAVIES, D. D., GIOVANELLI, J. and AP REES, T. 559

Plant biochemistry. Oxford, Blackwell Scientific Publications, 1964. xi, 454p, tables, diagrs, refs. 57s 6d. *Botanical monographs*, vol. 3.

B A good book on all aspects of plant biochemistry for advanced undergraduate students who have studied chemistry and are specializing in a biological subject.

FAEGRI, K. and IVERSEN, J. 560

Textbook of pollen analysis. 2nd rev. ed. With a chapter on pre-quaternary pollen analysis by H. T. Waterbolk. Copenhagen, Munksgaard; Oxford, Blackwell Scientific Publications, 1964. 237p, illus, tables, diagrs, refs. 47s 6d.

B Valuable introduction to the pollen analysis of peat and other sediments. It covers field and laboratory techniques, mapping and interpretation of data, simple definitions of pollen types with a key to N.W. European pollen types. Pollen classes and structure are simply and clearly illustrated.

RICHARDSON, J. A. 561

Physics in botany. Pitman, 1964. ix, 325p, plates, tables, diagrs, refs. 2 gns.

B Concise but readable volume outlining selected physical techniques and their application to botanical research. These include the measurement and artificial control of the plant environment with reference to such factors as heat, light, humidity, etc. The physical aspects of photosynthesis, respiration and translocation within the plant are discussed. There are also chapters on polarizing and electron microscopy and their use, and X-ray diffraction methods for elucidating the fine structure of cells; and the use of isotopes as tracers.

59 Zoology

BORROR, D. J. and DELONG, D. M. 562

Introduction to the study of insects. Rev. ed. NY, London, Holt, Rinehart & Winston, [1964]. xi, 819p, illus, tables, diagrs, glossary, index. 116s. [First pub. 1954.]

B In the last ten years there have been enough changes in the taxonomy of insects to justify a new edition. This is a complete revision; the classification of several orders has been brought up to date as have most of the bibliographies. In addition, most of the keys have been revised after experience of student use.

TAYLOR, A. E. R. ed. 563

Host-parasite relationships in invertebrate hosts: second symposium of the British Society for Parasitology. Oxford, Blackwell Scientific Publications, 1964. vii, 134p, tables, refs. 17s 6d. Paperback.

C Includes four separate papers: viruses in arthropodan hosts, especially those causing diseases in vertebrates; protozoa in arthropodan hosts, in particular malarial parasites in mosquitoes; trematodes in molluscan hosts (flake stages in snails); and filarial nematodes in arthropodan hosts (a general survey of the nematode Order Spirurida).

6 APPLIED SCIENCES**61 Health and Safety**

INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION

564

Radiation protection: recommendations of the Commission, (adopted 1962; with revisions adopted 1963), report of committee IV on protection against electromagnetic radiation above 3MeV and electrons, neutrons, and protons. Oxford, NY, [etc], Pergamon P, for the Commission, 1964. v,44p, tables, diags, 20s. *ICRP Publication 4*.

C First published ICRP report dealing with electromagnetic radiation above 3 MeV and neutrons and protons. Useful complementary document to the ICRP publication 3 which deals with energies up to 3 MeV. Details are given of the permissible flux densities of neutrons and protons up to 1000 MeV, together with general recommendations regarding equipment and operating conditions.

INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION

565

Radiation protection: recommendations of the Commission, (as amended 1959 and revised 1962). Oxford, NY, [etc], Pergamon P, for the Commission, 1964. v,70p, tables. 25s. *ICRP Publication 6*.

C These recommendations should be studied by all persons who are responsible for either the safety of staff who are exposed to radiation in the course of their work or the safety of the public from ionizing radiations. This latest statement brings up to date the 1958 and 1959 recommendations.

62 Engineering and Technology

SPORN, P.

566

Foundations of engineering. Oxford, NY, [etc], Pergamon P, 1964. 143p, tables, diag. 25s.

A A most readable philosophy of engineering and a verbal sketch book of some major feats in engineering and future problems. Should be read by all engineers, but can be picked up and read at any time with pleasure and profit by the general reader.

62.1 Mechanical and Electrical Engineering**621.039 Nuclear Engineering**

SALMON, A.

567

Nuclear reactor. London, Methuen; NY, Wiley, 1964. 144p, tables, diags, refs. 16s. *Methuen's monographs on physical subjects*.

B Useful introduction to the principles of the nuclear reactor, written for students of physics or engineering.

621.3 Electrical Engineering

BUCKLEY, R. V.

568

Guide to advanced electrical engineering. EUP, 1964. vi,167p, tables, diags, index, bibliog. 12s 6d. *Science and technology series*. Paperback.

B A collection mainly of fully worked examples in network theory and associated topics, together with brief theoretical introductions to each subject, 169 examples in all. Prepared chiefly for students taking IEE Part III examinations but also for others in a similar grade. Most useful guide.

CARTER, H.

569

Dictionary of electronics. 2nd ed. Newnes, [1964]. vi,410p, diags, appendixes. 35s.

D Concise definitions from many branches of electronics, including radio, television, communications, radar, electronic instrumentation, and industrial electronics. Appendixes give information on circuit symbols, abbreviations, colour codes, conversion tables, and valve buses. Cross referenced.

KESAEV, I. G.

570

Cathode processes in the mercury arc. Tr. from the Russian. NY, Consultants Bureau, 1964. xviii,345p, illus, tables, diags, refs. \$17.50.

C General description of experimental and theoretical work on the cold cathode arc is followed by more detailed treatments of arc stability, the structure of the cathode spot, and its motion. Many experimental results obtained by a variety of techniques and 188 references are given.

- LAURENT, T. 571
Frequency filter methods. Stockholm, Almqvist & Wiksell; NY, London, Wiley, 1964. 320p, tables, diagrs, bibliog. 132s.
C Specialized, chiefly concerned with the design of filters as used in multi-channel carrier telephone links. After initial study of basic filter theory, design techniques based on the image parameter method are compared with the insertion loss method. Attenuation and phase equalization of filters are also considered.
- STIGANT, S. A. 572
Master equations and tables for symmetrical component fault studies. Macdonald, 1964. x, 78p, tables, diagrs, bibliog. 25s.
B A mathematical approach to the problem of calculation of symmetrical component analysis of polyphase systems under fault conditions giving complete sets of equations and tables for routine determination of currents and voltages.
- TUCKER, D. G. 573
Elementary electrical network theory. Oxford, NY, [etc], Pergamon P; NY, Macmillan, ©1964. x, 169p, tables, diagrs, index. 17s 6d. *Commonwealth and international library of science, technology, engineering, and liberal studies*. Paperback.
B A really basic study of the subject with the necessary (but not unnecessary) mathematics. Covers power and electronics networks in steady-state and transient operation and of the kinds commonly encountered in practice.
- 629.7 Air/Space Transport Engineering**
- KING-HELE, D. 574
Theory of satellite orbits in an atmosphere. Butterworths, 1964. vi, 165p, tables, diagrs, refs. 30s. *Butterworths mathematical texts*.
C Covers all aspects of drag on a satellite, the order of magnitude of the different effects and the subsequent changes in orbit parameters. Two useful chapters on the basic theory involved and a full discussion of the practical applications are included.
- 63 Agriculture. Forestry. Livestock. Fisheries**
- CANHAM, A. E. 575
Electricity in horticulture. Macdonald, 1964. x, 199p, plates, tables, diagrs, refs. 25s. *Macdonald technicians and crafts series*.
A-B Good general book on the uses of application of electricity in horticulture, with a useful bibliography. It does not cover practical construction or erection details, leaving this aspect to the advisers on the site.
- KUMAR, L. S. S. and others 576
Agriculture in India. Vol. III: animals. By L. S. S. Kumar, A. C. Aggarwala, H. R. Arakeri, M. G. Kamath, E. N. Moore, in collab. with R. L. Donahue. Asia Publishing House, 1963 (i.e. May 1964). xx, 236p, illus, plates, tables, diagrs, refs. 2 gns. (Vol. I and vol. II, revd vol. 29, May, 271.)
A Indian multipurpose high-school textbook. Includes fish, wild life, useful insects and household pests, as well as farm livestock.
- ZWEIG, G. ed. 577
Analytical methods for pesticides, plant growth regulators, and food additives: vol. II, insecticides; vol. III, fungicides, nematocides and soil fumigants, rodenticides, and food and feed additives. NY, London, Academic P, 1964. xvii, 619p; xii, 237p, diagrs, indexes. 164s; 86s.
C Two volumes of a comprehensive work to collocate for convenience the analytical techniques associated with pesticides, etc. All the authors are working specialists in the service of government departments, universities, or the trade, and are actively concerned with these chemicals and their derivatives. All are American, where experience is probably widest in these fields in a varied range of climate and temperature and large-scale operation. Apart from the official methods of the Association of Official Agricultural-Chemists, there is little else available covering such a specialist field of interest.

65 Business Techniques. Management

THEIL, H.

578

Optimal decision rules for government and industry. Amsterdam, North-Holland, 1964. xvii,364p, tables, bibliog. 72s. *Studies in mathematical and managerial economics, vol. I.*

C A moderately difficult self-contained book for understanding complex and difficult situations; any book by this author is important and helpful especially as a development of his 'Economic forecasts and policy'.

66 Chemical Technology**666 Glass Technology**

TARASOV, V. V.

579

New problems in the physics of glass. Tr. from the Russian. Jerusalem, Israel Program for Scientific Translations (distrib. by Oldbourne P), 1963. v, 225p, tables, diagrs, bibliogs. 80s.

C Main purpose of book is to present data on specific heat measurements made at low temperatures on inorganic glasses. The results are used to illustrate the conclusion that chain-like structures exist in elementary glasses such as vitreous selenium, and simple compounds such as vitreous boron anhydride (B_2O_3). The author has previously proposed a theoretical model of high-polymer structure for some glasses; the new data have allowed his hypothesis to be extended to a much wider range of vitreous compositions.

669 Metallurgy

580

RECENT progress in metal working; lectures delivered at The Institution of Metallurgists refresher course, October 1963. London, Iliffe; NY, Elsevier, 1964. 136p, plates, tables, diagrs, refs. 37s 6d.

C An authoritative collection of papers covering the development of plasticity theory for the solution of metal working problems, the impact of higher speed processing with instrumentation and automation on conventional working methods, high-rate forming methods—particularly using explosives, and the general metallurgical effects of the mechanical working of cast structures.

67/68 Manufactures**681 Precision Mechanisms**

SAXON, J. A.

581

Cobol: a self-instructional manual. Englewood Cliffs (NJ), Prentice-Hall, [1964]. xi,190p, tables, 40s. Paperback.

B Designed to teach the beginner the fundamentals of Cobol—an English-like 'universal' programming language for commercial applications. An acceptable simplified introduction to a difficult subject.

SAXON, J. A. and PLETTE, W. S.

582

Programming the IBM 1401: a self-instructional programmed manual. Englewood Cliffs (NJ), Prentice-Hall, [1964]. xv,208p, tables, diagrs. 56s.

B Excellent example of the usefulness of programmed texts in certain subjects. Each lesson contains practical problems, examples, visual aids, and self-scored tests. Presents the basic principles and methods of programming this widely used computer.

69 Building Industry

DAVEY, N.

583

Building in Britain: the growth and organization of building processes in Britain from Roman times to the present day. Evans Brothers, 1964. 191p, illus, plates, refs. 1 gn.

B Concise, well-organized, and appropriately illustrated history of the building crafts and industry in Britain from Roman times to the present, written primarily for candidates taking the examinations of the Institute of Builders and the City and Guilds of London Institute, but worthy of a wider audience.

DENT, C.

584

Quantity surveying by computer. OUP, 1964. xi,139p, plates, tables, diagrs, index. 15s. Paperback.

B An essentially practical study of the digital computer in its application to quantity surveying. The book describes and illustrates computers with particular reference to the Pegasus machine. Auxiliary equipment also included. All phases of computer operation are discussed and detailed examples are provided of applications to the practical requirements in quantity surveying. An excellent book and remarkably inexpensive.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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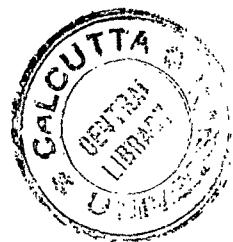
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3 SOCIAL SCIENCES

37 Education

KEMENY, J. G.

585

Random Essays on mathematics, education and computers. Englewood Cliffs (NJ), Prentice-Hall, ©1964. diagsr. 40s.

A Ideas on the general theme of the outmoded teaching methods in mathematics today. The author, who is head of the mathematics department at Dartmouth College, argues that in the age of the computer, teaching should try to capture the imagination of the student.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

BETZ, H., BURCHAM, P. B. and EWING, G. M.

586

Differential equations with applications. 2nd ed. Ed. by C. A. Hutchinson. NY, London, Harper & Row, ©1964. xi,354p, tables, diagsr, refs, appendixes, index. 56s. *Harper's mathematics series*.

B A revised edition of the work originally published in 1954. Applications are stressed throughout and equations to be solved are constructed from realistic situations rather than presented as abstract problems. Partial differential equations and an introduction to difference equations are included. Knowledge of the calculus is assumed. Many exercises with answers.

DROBOT, S.

587

Real numbers. Englewood Cliffs (NJ), Prentice-Hall, ©1964. 102p, diagsr, refs. 28s.

B Based on a series of lectures sponsored by the National Science Foundation and given to high-school teachers at the University of Notre-Dame, this is not a course on the subject but a review of the concepts involved and their place in mathematical thinking.

FREDERIKSEN, N. and GULLIKSEN, H. eds

588

Contributions to mathematical psychology; with chapters by R. P. Abelson, C. H. Coombs; J. P. Guilford, H. Gulliksen, P. Horst, L. R. Tucker and D. C. Adkins. NY, London, [etc], Holt, Rinehart & Winston, ©1964. vii,189p, frontispiece, tables, diagsr, refs, index. 54s.

C Articles originally presented to an audience of scholars at the Educational Testing Service reflecting the influence of the late L. L. Thurstone on the occasion of the dedication of Thurstone Hall. Mathematical papers deal with some symmetries and dualities among measurement data matrices, intercultural studies of attitudes, extension of factor analysis to three-dimensional matrices, matrix factoring and test theory and mathematical models of the distribution of attitudes under controversy.

NEWSOM, C. V.

589

Mathematical discourses: the heart of mathematical science. Englewood Cliffs (NJ), Prentice-Hall, ©1964. 125p, diagsr. 36s.

A Sound introduction to logic and the use of logical argument in mathematical proofs. Although written for the non-mathematician, useful also for students of mathematics in universities and colleges of advanced technology.

SINGER, J.

590

Elements of numerical analysis. NY, London, Academic P, ©1964. x,395p, tables, diagsr, bibliog. 70s 6d. *Academic Press textbooks in mathematics*.

B A sound introduction intended primarily for users of desk calculators, this book is suitable for readers with a knowledge of elementary differential equations. After stressing the importance of accuracy and precision, the subject is logically developed with considerations of finite difference calculus, numerical solution of differential equations and the method of least squares.

- SOKOLNIKOFF, I. S. 591
Tensor analysis: theory and applications to geometry and mechanics of continua. 2nd ed. London, NY, Wiley, [1964]. xii,361p, diagrs, index, bibliog. 74s. *Applied mathematics series*.

C The second edition of this well-known text contains some new features. The concluding chapter on the mechanics of a continuous medium has been rewritten and provides a common basis for the study of elasticity, plasticity, hydrodynamics and gas dynamics. Other new features include an extension of the use of the calculus of variations in geometry, and a further development of the chapter on analytical mechanics.

- SPITZER, F. 592
Principles of random walk. Princeton (NJ), Van Nostrand, ©1964. x,406p, bibliog. 74s. *University series in higher mathematics*.

C Highly technical book intended for research mathematicians and physicists working in the field of stochastic process theory. The central theme is the relation between random walk theory and modern potential theory.

52 Astronomy. Surveying. Geodesy

- DRONKERS, J. J. 593
Tidal computations in rivers and coastal waters. Amsterdam, North-Holland, 1964. xii,518p, tables, diagrs, bibliog. 110s.

B-C A rigorous mathematical treatment provides a bridge between the unique practical experience of the Netherlands school of coastal engineering and the interests of the more academically minded hydrodynamicist and oceanographer to give a real understanding of the problems involved in the study of tidal phenomena in estuaries and coastal regions. For engineering students and applied mathematicians.

53 Physics

- BECKER, R. 594
Electromagnetic fields and interactions. Vol. 1, electromagnetic theory and relativity, ed. by F. Sauter, tr. by A. W. Knudsen. London, Blackie; NY Blaisdell, [1964]. xiii,439p, tables, diagrs, index. 40s.

B This edition replaces the classic Abraham-Becker text. It incorporates the two parts of Becker's book in a single volume, extensively rewritten, and preserves the high standard of the previous editions. The CGS units of the earlier editions are retained, but some equations are given also in MKS units.

- BECKER, R. 595
Electromagnetic fields and interactions. Vol. 2, quantum theory of atoms and radiation, ed. by F. Sauter, tr. by I. de Teissier. London, Blackie; NY Blaisdell, [1964]. ix,403p, tables, diagrs, index. 55s.

B A revised and translated edition of the second part of Becker's classic work 'Theorie der elektrizitat', as completed by Leibfried and Brenig. This is the electron theory part of the three-volume work, and gives an introduction to quantum mechanics; it follows the first volume on Maxwell's theory and special relativity. It preserves the high standards of the earlier work and is well translated.

- COLTHUP, N. B., DALY, L. H. and WIBERLEY, S. E. 596
Introduction to infrared and Raman spectroscopy. NY, London, Academic P, 1964. xii,511p, illus, tables, diagrs, indexes. 86s.

B Authoritative text which discusses in some detail the theory of infra-red and Raman spectra, including the origin of group frequencies and the effects of interaction and coupling. The calculation of the fundamental frequencies of chloroform is given in detail. Well documented discussion of spectra group correlations and a brief account of experimental equipment and techniques.

- GORTER, C. J. ed. 597
Progress in low temperature physics. Vol. 4. Amsterdam, North-Holland, 1964. xii,530p, tables, diagrs, refs. 6 gns.

B-C A collection of ten papers dealing chiefly with the properties of liquid helium, metals and superconductivity, and magnetism. Valuable both to the beginning and the established research worker in this field as a survey of developments in recent years.

- LOWDIN, P. and PULLMAN, B. eds 598
Molecular orbitals in chemistry, physics, and biology: a tribute to R. S. Mulliken. NY, London, Academic P, 1964. xiii, 578p, frontispiece, tables, diags, refs, indexes. 157s.
C Contributions by numerous distinguished experts present new results or discuss recent progress regarding the application of orbital theory to problems in chemical physics, physical and physical-organic chemistry, and biochemistry. Accounts of Mulliken and his scientific work are provided.
- MARKSTEIN, G. H. ed. 599
Nonsteady flame propagation. Oxford, NY, [etc], Pergamon P, for and on behalf of Agard and NATO, 1964. x, 328p, illus, diags, refs. 110s. *Agardograph* 75.
C Presents a broad treatment of flame stability, edited and contributed to by a well-known worker in the field. A brief review of the theory of flame propagation is followed by perturbation analysis. Experimental studies on instability are described, as well as propagation in tubes and closed vessels. Various types of combustion oscillations are included. Possibly the most valuable contribution is in the final chapter—concerned with practical applications of nonsteady flames.
- MATHEWS, J. and WALKER, R. L. 600
Mathematical methods of physics. NY, Amsterdam, Benjamin, 1964. x, 475p, tables, diags, index, bibliog. \$13.75.
C Useful text dealing with most of the mathematical methods needed for physicists. Included are chapters on matrices, integral equations, tensors, Green's functions and group representations. Concise and readable in style, containing worked examples and problems. Suitable for final-year or postgraduate physicists.
- MCDANIEL, E. W. 601
Collision phenomena in ionized gases. London, NY, Wiley, ©1964. xxii, 775p, tables, diags, refs, indexes. 132s. *Wiley series in plasma physics*.
C A comprehensive and authoritative detailed treatise on the theory and experimental results of investigations into elastic and inelastic interactions between particles, ion formation, photoabsorption, mobility, diffusion and recombination. Subject is treated at a postgraduate level.
- RHODES, R. G. 602
Imperfections and active centres in semiconductors. Oxford, NY, [etc], Pergamon P, 1964. xii, 373p, plates, tables, diags, refs, index. 90s. *International series of monographs on semiconductors*, vol. 6.
B-C Well documented concise account for advanced students, physicists and chemists, of the nature and behaviour of impurities and dislocations in relation to the growth, preparation and technical properties of silicon and germanium.
- 603
SELECTED topics in nuclear spectroscopy: proceedings of the NUFFIC International Summer Course in Science at Nijenrode Castle, The Netherlands, July 30–August 17, 1963. Comp. by B. J. Verhaar. Amsterdam, North-Holland, 1964. 348p, tables, diags, refs. 72s.
C Detailed reviews and contributions by leading scientists to the theory of nuclear structure and scattering, and its relationship to experimental results. Particular reference to collective and shell model energy level calculations; charge dependent effects; nuclear moments; beta decay schemes and the conservation vector current theory; elastic and inelastic scattering.
- THOMSON, G. P. 604
J. J. Thomson and the Cavendish Laboratory in his day. Nelson, ©1964. xi, 186p, plates, diags, index. 25s.
A An account of the significance, in relation to the physics of their day, of the work of the discoverer of the electron and the men who worked with him, and under him, in the Cavendish Laboratory.
- 54 Chemistry
BROWN, T. L. 605
General chemistry. Columbus, Ohio, Merrill, [1964]. xvi, 512p, illus, tables, diags, index. 57s 6d.
B One-year course in physical and inorganic chemistry for university students. There is emphasis on the thermodynamical approach; descriptive chemistry is interwoven with the discussion of physical principles. Each chapter has a further reading list and exercises.

- CASTELLAN, G. W. 606
Physical chemistry. Reading (Mass.), London, [etc], Addison-Wesley, ©1964. xv,717p, tables, diags, refs, appendixes, index. 94s. *Addison-Wesley series in chemistry*.
B Lucidly written, well presented text for first-year degree students, with strong emphasis on the clear explanation of fundamental features. Thermodynamics, kinetic theory and electrochemistry are particularly well treated and the text is supported by numerous examples.
- CLAR, E. 607
Polycyclic hydrocarbons. Chapter on carcinogenesis by R. Schoental. Vol. 1; vol. 2. London, NY, Academic P; Berlin, [etc], Springer-Verlag, 1964. xxvii, 487p; lvii,487p, plates, tables, diags, refs, index. 126s; 140s.
C Distinguished, comprehensive, and well presented work by leading authority. Following an account of the general aspects which include particularly spectroscopic, electrical and magnetic properties and their contributions to the theoretical understanding, carcinogenesis, and general synthetic reactions, the different classes of compounds are surveyed systematically. Fully documented.
- COFFEY, S. ed. 608
Rodd's chemistry of carbon compounds; vol. 1A, general introduction, hydrocarbons, halogen derivatives. 2nd ed. Amsterdam, London, NY, Elsevier, 1964. xviii,569p, tables, diags, index. 160s.
B-C New edition comprises a larger number of shorter parts; the first instalment consists mainly of an enlarged and up-to-date general introduction, with authoritative articles on (amongst others) classification, analysis, spectra, stereochemistry, reaction mechanisms, uses of isotopes and wave mechanics. Sections on the chemistry of saturated and unsaturated aliphatic hydrocarbons and of their halogen derivatives also included. Numerous selected references.
- GOLDEN, S. 609
Elements of the theory of gases. Reading (Mass.), London, [etc], Addison-Wesley, ©1964. v,154p, tables, diags, refs, index. 38s. *Addison-Wesley series in chemistry*.
B Authoritative text written for degree students in chemistry, illustrating the elaboration and application of physical theory on basis of experimental results. The treatment requires knowledge of calculus. The first part of the book discusses experimental results, the latter develops the kinetic theory of ideal and non-ideal gases.
- HARTSHORNE, N. H. 610
Practical optical crystallography. Arnold, 1964. vii,326p, plates, tables, diags, index. 40s.
B Well illustrated account for students of geology, ceramics and crystallography embracing crystal structure, morphology and habit; the optical design, function and correct use of the polarizing microscope; specimen preparation and the examination of isotropic, uniaxial, biaxial and optically active crystals in parallel and convergent light.
- KIRMSE, W. 611
Carbene chemistry, with contributions by H. M. Frey, P. P. Gaspar and G. S. Hammond; ed. by A. T. Blomquist. NY, London, Academic P, 1964. viii,302p, tables, diags, refs, indexes. 76s. *Organic chemistry series of monographs, vol. 1*.
B-C Well written, comprehensive and fully documented account of the formation, properties, structure and reactions of different classes of carbenes. Separate chapters are given to the problem of the excess energy of carbenes, and to their spin states.
- NEHER, R. 612
Steroid chromatography. 2nd rev. ed. Amsterdam, London, NY, Elsevier, 1964. xiii,389p, plates, tables, diags, refs, index. 60s.
C Up-to-date and fully documented account dealing primarily and in considerable detail with the experimental features of column, partition, paper, thin layer and gas chromatography, including the choice of equipment, adsorbant and solvents. Some attention is given to the correlation of chromatographic behaviour to chemical structure.

SCOTT, A. I. 613

Interpretation of the ultraviolet spectra of natural products. Oxford, NY, [etc], Pergamon P, 1964. x,443p, tables, diagrs, refs, appendix, index, bibliog. 4 gns. *International series of monographs on organic chemistry*, vol. 7.

B-C Well written work on the application of ultra-violet spectroscopic data to the elucidation especially of complex organic structures, written for organic rather than for theoretical chemists. The discussion is based on numerous experimental data drawn mainly from a wide range of natural products. A lengthy appendix lists data for steroids which can be used in their spectrophotometric analysis. Selected references to early 1961 are included.

SHTERN, V. Ya. 614

Gas-phase oxidation of hydrocarbons. Tr. by M. F. Mullins; ed. by B. P. Mullins. Oxford, NY, [etc], Pergamon P, 1964. x,710p, tables, diagrs, refs, index. 100s. [First pub. Moscow 1960].

C Authoritative Russian work describing in historical order the experimental methods and results, and the light they throw on the mechanism of the oxidation paraffins, olefines, naphthenes, and of aromatic hydrocarbons, and on the control of such reactions. Numerous references.

WHITE, E. H. 615

Chemical background for the biological sciences. Englewood Cliffs (NJ), Prentice-Hall, ©1964. viii,152p, tables, diagrs, index. 16s. *Foundations of modern biology series*. Paperback.

E A brief outline of chemistry for the student of biochemistry and biology. Includes a modern approach to atomic structure and valency. The bias is towards organic chemistry, with particular reference to naturally occurring compounds. Compact and well illustrated.

ZBINDEN, R. 616

Infrared spectroscopy of high polymers. NY, London, Academic P, 1964. xii,264p, tables, diagrs, refs, index. 76s.

C Well selected and clearly written account of infra-red spectroscopic methods and their application to the elucidation of the chemical and physical structure of chain high polymers. Following an account of the characteristic features of polymer spectra, selection rules, numerical calculations of vibrations and vibrational interaction in chain molecules are discussed in turn, and the last chapter deals with the application of the experimental techniques to examples.

57 Anthropological and Biological Sciences

DARWIN, C. 617

On the origin of species. Facsimile of 1st ed. Introduction by E. Mayr. Cambridge (Mass.), Harvard University P; Oxford, OUP, 1964. ix,502p, bibliog. 48s.

A The first edition of this 'monument in man's intellectual history' was sold out on the day of publication in 1859. Hitherto all available reprints have been based on the greatly modified sixth edition, the last one prepared by Darwin himself. The general reader, who wishes to appreciate the quality and revolutionary freshness of Darwin's writing, can now do so in this facsimile reprint which is a worthy piece of bookmaking. The authoritative introduction by the Director of the Museum of Comparative Zoology at Harvard University helps to place this classic in a modern setting.

PRESCOTT, D. M. ed. 618

Methods in cell physiology. Vol. 1. NY, London, Academic P, 1964. xiii,465p, illus, tables, diagrs, refs. 118s.

C Authoritative accounts of the experimental handling and culture of a variety of cell types currently employed in cell biology including selected plasmodia, amoebae, ciliates and algae, root tips, mammalian tissue cultures and grasshopper neuroblasts. Applications of autoradiography are given comprehensive treatment. Other topics include aspects of nictosis; pinocytosis and microanalysis for nucleic acids.

59 Zoology

619

ADVANCES in morphogenesis; vol. 3. Ed. by M. Abercrombie and J. Brachet. NY, London, Academic P, 1964. xi,408p, illus, tables, diagrs, refs. 100s.

C A collection of nine essays on various aspects of this field, including the development of gastropods, aquatic fungi, development of sea urchins, chick embryos, the role of nucleic acids, cell divisions in early embryonic development, the Acrasina and the role of the cortex of the amphipian egg.

620
PROGRESS in protozoology: proceedings of the first international congress on protozoology, Prague, Aug. 22-31, 1961. Ed. by J. Ludvík, J. Lom, and J. Vávra. Prague, Publishing House of the Czechoslovak Academy of Sciences; London, NY, Academic P, 1963 [i.e. April 1964]. 623p, 105p (illus), plates, tables, diagrs, indexes. 171s 6d.

C Contains nearly two hundred papers on original work, mostly presented in full, and many illustrated; a few as abstracts.

SCHMIDT-NIELSEN, K.

621
Animal physiology. 2nd ed. Englewood Cliffs (NJ), Prentice-Hall, ©1964. viii, 118p, tables, diagrs, index. 12s. 6d. *Foundations of modern biology series*. Paperback.

B Excellently illustrated introduction to comparative physiology. Deals with nutrition, metabolism, temperature control, water balance, movement with and without muscle, nervous and endocrine systems.

6 APPLIED SCIENCES

62 Engineering and Technology

621.3 Electrical Engineering

622
CENTRAL ELECTRICITY GENERATING BOARD. Modern power station practice: a revised version in five volumes of a correspondence tuition course prepared by the . . . Board; vols. II, III, IV. The Board, 1963. 285p, 339p, 335p, tables, diagrs, bibliog. 60s.

A-B These are serviceable books to intermediate standard dealing with the main and electrical plant in modern power stations, intended to supplement the practical experience of workers. Should also be useful to the interested general reader.

CHANG, K. K. N.

623
Parametric and tunnel diodes. Ed. by W. L. Everitt. Englewood Cliffs (NJ), Prentice-Hall, ©1964. xiv, 256p, plates, tables, diagrs, bibliog. 88s. *Prentice-Hall series in electrical engineering*.

C The only book of its kind to date to deal comprehensively with the physical theory and applications of both parametric and tunnel diodes, taking the subject matter from an introductory to an advanced stage.

DEAN, K. J.

624
Introduction to counting techniques and transistor circuit logic. C & H, 1964. xii, 223p, diagrs, bibliog. 25s. *Modern electrical studies*.

B Covers aspects of both design and use of transistor logic circuits. Not recommended for the former, but the main theme, which deals with the organization and manipulation of basic logic 'building bricks' to perform more complex functions, is well treated. Good practical examples of the application of various logical arrangements are given.

HANCOCK, N. N.

625
Matrix analysis of electrical machinery. NY, Macmillan; Oxford, [etc], Pergamon P, ©1964. xii, 244p, tables, diagrs, refs, index. 1 gn. *Commonwealth and international library of science, technology, engineering and liberal studies*. Paperback.

B Useful text covering static networks, transformers and rotating machines and such auxiliary matters as torque, transformations, performance calculations, steady-state and transient machine conditions. Exercises without answers. Recommended for undergraduates and postgraduates.

PASKUSZ, G. F. and BUSSELL, B.

626
Linear circuit analysis. Englewood Cliffs (NJ), Prentice-Hall, [1964]. xviii, 359p, tables, diagrs. 78s. 6d. *Prentice-Hall series in electrical engineering*.

B The linear analysis, not only of electrical, but also mechanical, acoustical, thermal and mixed systems, is introduced by the discussion of circuit description by differential equations, and their solution in the transient and steady state by Laplace and other methods. Later chapters discuss power and energy, circuit theorems, resonance and nonsinusoidal excitation.

PATCHETT, G. N. 627
Automatic voltage regulators and stabilizers. 2nd ed. Pitman, x,468p, illus, tables, diagrs, refs. 65s.

B Since the first edition of 1954, this has been revised and enlarged about 50 per cent to include semiconductor circuits. A comprehensive textbook with a massive list of references for further reading.

RAMEY, R. L. 628
Electronics and instrumentation. Iliffe, [1964]. x,321p, tables, diagrs, index. 55s. [First pub. USA 1963].

B A highly rationalized first course book for engineering or physics students to cover the electronics required in instrumentation for physical measurement. A sound selection of topics in network methods (including signal flow) leading to four chapters on amplifiers and two on instrumentation and transducers. Abbreviated, but a good guide including useful unconventional material.

VON WEISS, A. 629
Matrix analysis for electrical engineers. Tr. by E. Brenner. Princeton (NJ), Van Nostrand, ©1964. x,171p, tables, diagrs, appendixes, index. 62s.

B Gives basic mathematics of the matrix method and also practical applications to the solution of linear problems in electrical circuit theory. Examples and exercises given. Recommended as an introductory work for students in universities and technical colleges.

621.4 Internal Combustion and Other Special Engines

SOLAR and aeolian energy: proceedings of the International Seminar on Solar and Aeolian Energy, held at Sounion, Greece, September 4-15, 1961. Ed. by A. G. Spanides. NATO Institute of Advanced Studies in Solar and Aeolian Energy, distrib. by Plenum P, ©1964. ix,491p, illus, tables, diagrs, refs. \$17.50.

B Principal topics covered included conversion of solar energy to electricity; saline water conversion by means of solar stills; use of freezing unit machinery operated by solar energy; hydroponics; solar energy as a fuel substitute; techniques for power production from aeolian (wind) energy. Contributions in English and French.

621.7 Workshop Practice

HIGH-VELOCITY forming of metals. Prepared under the supervision of National Technical Publications Committee, American Society of Tool and Manufacturing Engineers, with F. W. Wilson, ed. in chief. Englewood Cliffs (NJ), Prentice-Hall, ©1964. xiii,188p, illus, tables, diagrs, refs, index. 60s. *A.S.T.M.E. Manufacturing data series*.

C A concise yet intensive treatment of the principles, mechanics, equipment and methods employed in the forming of metals by the explosive, electro-hydraulic, magnetic pulse and pneumatic-mechanical processes. Emphasis is equally on both the theoretical and practical aspects of the subject.

PATTERSON, E. 632
Workshop processes and materials. Book 1. Evans Brothers, 1964. 135p, illus, tables, diagrs. 10s 6d. *General course series*.

B Practical little book for the apprentice and first-year student of the General Engineering Course. Written in clear language and amply illustrated, but cannot claim to cover grounds not already treated in a number of similar publications.

624 Structural Engineering

ROBINSON, J. R. 633
Piers, abutments and formwork for bridges. Tr. edited and adapted by J. McHardy Young. Crosby Lockwood, 1964. x,286p, illus, tables, diagrs, index. 3 gns.

C The author's wide knowledge and working experience are the actual references for a detailed examination of the technical problems, design methods and calculations. Statement on the aesthetic and historical significance of bridge design, with reference to British standards and practice.

63 Agriculture. Forestry. Livestock. Fisheries

LAVERTON, S.

634

Irrigation: its profitable use for agricultural and horticultural crops. OUP, 1964. viii, 166p, plates, tables, diags, bibliog. 1 *gn*.

A Survey of the literature which has appeared during the last decade (particularly the latter half) presenting a picture of recent trends and current practices. Basic principles on the need for irrigation lead to the practical consideration of its planning, installation, operation and likely costs and returns. Useful chapters on frost control and effluent disposal by irrigation systems.

66 Chemical Technology

IRVINE, T. F. and HARTNETT, J. P. eds

635

Advances in heat transfer. Vol. 1. NY, London, Academic P, 1964. xi, 459p, illus, tables, diags, refs. 114s 6*d*.

C Collection of six review papers contributed by authoritative specialists. Each topic is treated in a comprehensive and logical manner. Valuable to engineers and research workers in heat transfer.

NONHEBEL, G. ed.

636

Gas purification processes. Newnes, 1964. xviii, 894p, plates, tables, diags. 140s.

C Compiled by an international panel of experts, this work provides the industrial reader with a review of gas purification processes, including much information more associated with problems arising from atmospheric pollution.

669 Metallurgy

PECKNER, D. ed.

637

Strengthening of metals. With contributions by J. C. M. Li, E. R. Parker, R. L. Fleischer, M. E. Fine, N. J. Grant, E. S. Machlin and P. A. Flinn. London, C & H; NY, Reinhold, ©1964. vi, 250p, illus, diags, refs, index. 100s; \$12.50.

B Written by a group of leading metal physicists, the book deals at the atomic level with the following six basic metal hardening processes: solid-solution, strain, precipitation, dispersion, martensitic transformation and super-lattice formation. Dislocations are the main theme of the book, each strengthening process being treated as a means of resisting dislocation movement.

67/68 Manufactures

638

INTRODUCTION to textile printing. Butterworths, in association with I.C.I. Dyestuffs Division, 1964. x, 180p, tables. 22s 6*d*.

B Handbook on textile printing under school or laboratory conditions, not for industrial use. It deals mainly with hand printing by screen or block, including preparation and finishing of fabrics. An excellent work of reference for technical schools or schools of art.

681 Precision Mechanisms

BALAKRISHNAN, A. V. and NEUSTADT, L. W. eds

639

Computing methods in optimization problems. Proceedings of a conference held at University of California, 30-31 January 1964. NY, London, Academic P, 1964. x, 327p, tables, diags. 60s.

C Up-to-date and comprehensive coverage of available techniques; strongly biased towards application, it will be extremely useful for control engineers, but includes sufficient consideration of fundamentals to interest researchers. Treatment is not uniform, some papers detailed, others broad critical reviews with thorough references to basic sources. Essential for libraries rather than individuals.

CHUNG, A. M.

640

Linear programming. Columbus, Ohio, Merrill, [1964]. xiii, 338p, tables, diags, bibliog. 3 *gns*.

B Detailed account of the theory of linear programming with numerical examples and exercises. Little prior mathematical knowledge is assumed; main emphasis is on the Simplex method and variations on it. Reference is made to the dual approach, optimality analysis, transportation problems and quadratic programming. Based on a course of lectures for students of applied economics, industrial engineering, management science and operations research.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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December 1964

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5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- CHIRGWIN, B. H. and PLUMPTON, C. 641
Course of mathematics for engineers and scientists. Vol. 5. Oxford, NY, [etc], Pergamon P, 1964. viii,202p, tables, diagrs, index, bibliog. 25s.
B An admirable little book, dealing with the basic ideas of Fourier series, Laplace transforms, functions of a complex variable including contour integration, and Fourier integrals. Includes many worked examples and problems.
- FRIEDMAN, A. 642
Generalized functions and partial differential equations. Englewood Cliffs (NJ), Prentice-Hall, 1963 [i.e. 1964]. xii,340p, tables, index, bibliog. 4 gns.
C A very advanced text dealing with some of the modern techniques using generalized functions for the solution of partial differential equations. Included in the contents are chapters on topological spaces, distributions, Fourier transforms of generalized functions, and the Cauchy problem for partial differential equations. Included also are some of the author's own research contributions to the field.
- GEARY, R. C. and MCCARTHY, M. D. 643
Elements of linear programming: with economic applications. Ed. by M. G. Kendall. Griffin, 1964. 126p, tables, diagrs, appendixes, index. 30s. *Griffin's statistical monographs & courses, no. 15*. Paperback.
B-C A useful introduction to the simplex method of linear programming. The work shows the solution of a simple problem by this method step by step, then proceeds to the general case. The second half consists of five examples of simplex applications from the economics field.
- MORETTI, G. 644
Functions of a complex variable. Englewood Cliffs (NJ), Prentice-Hall, ©1964. xv,456p, tables, diagrs, index. 72s. *Prentice-Hall international series in applied mathematics*.
B Useful for the physicist or engineer who wishes to obtain a good background to complex variable theory. Included in the list of contents are conformal mapping, contour integration, elliptic functions, Fourier series, Laplace transforms, and the Dirac delta function.
- NOBLE, B. 645
Numerical methods: 2, differences, integration and differential equations. Edinburgh, London, O & B; NY, Interscience, 1964. viii,215p, tables, diagrs, index. 12s 6d. *University mathematical texts*. [Vol. 1, revd vol. 29, May, 235.]
B-C Provides an introduction to numerical analysis for university mathematics students. Finite differences, polynomial interpolation, numerical differentiation and integration, and the numerical solution of differential equations and partial differentiation are included.
- ROBERTSON, A. P. and ROBERTSON, W. 646
Topological vector spaces. CUP, 1964. viii,158p, index, bibliog. 30s; \$4.95. *Cambridge tracts in mathematics and mathematical physics, no. 53*.
C Dr and Mrs Robinson assume very little previous knowledge of algebra or topology, but describe the main results and theorems of their topic in a clear and general fashion, backing up the general theory with a good deal of illustrative matter, thus providing a first-class introduction for the young research student.
- SANGER, J. 647
Higher mathematics for production engineers. London, Macmillan; NY, St Martin's P, [1964]. viii,304p, tables, diagrs, appendixes, index. 30s.
B A new textbook which gathers all the mathematics required for the higher national certificate, a diploma in production engineering, and the examinations of the Institution of Production Engineers into a single volume. This comprehensive coverage makes it useful as a work of reference. Amply provided with worked examples and exercises.

- WASHINGTON, A. J. 648
Basic technical mathematics with calculus. Reading (Mass.), London, [etc], Addison-Wesley, ©1964. xii,595p, tables, diagrs, appendixes, index. \$8.75.

B Algebra up to theory of equations and complex numbers, basic trigonometry and analytic geometry, and calculus up to second-order differential equations. The presentation is clear and conventional. Examples and exercises (with answers, including answers to graphical problems) are provided.

53 Physics

- ADVANCES in applied mechanics. Vol. 3. Ed. by H. L. Dryden and Th. von Kármán. NY, London, Academic P, 1964. x,298p, tables, diagrs, refs, indexes, bibliog. 86s. 649

C Five papers on magneto-aerodynamic flow, incompressible second-order fluids, generation of sound by turbulent jets, stability of motion of solid bodies with liquid-filled cavities, and the theory of oscillations of liquid-containing bodies. Each paper has a comprehensive list of references and the topics are treated at an advanced level.

- AL'TSHULER, S. A. and KOZYREV, B. M. 650
Electron paramagnetic resonance. Tr. by Scripta Technica Inc., tr. edited by C. P. Poole, Jr. NY, London, Academic P, 1964. xi,372p, tables, diagrs, index. 96s 6d.

C Comprehensive review of theoretical and experimental work done both in Russia and outside, up to 1958. Contains useful tables.

- ANDERSON, J. C. 651
Dielectrics. Ed. by G. D. Sims. C & H, 1964. viii,171p, tables, diagrs, refs, indexes. 28s. *Modern electrical studies.*

B Textbook giving an introduction to the theory of dielectrics, emphasizing recent developments and dielectric devices. Suitable for final year undergraduate students of physics and electrical engineering, with a bibliography giving guidance for more advanced study.

- BLITZ, J. 652
Elements of acoustics. Butterworths, 1964. vii,136p, tables, diagrs, index. 22s 6d.

B Describes low amplitude elastic wave propagation at audio and ultrasonic frequencies. Shock waves and ultrasonics are not included.

- CLARKE, J. F. and MCCHESENEY, M. 653
Dynamics of real gases. Butterworths, 1964. ix,419p, tables, diagrs, refs, index. 90s.

C A comprehensive statement of the basic theories of the behaviour of real gases from classical thermodynamics to quantum theory and their application to simple flow problems. For research workers in aerodynamics and fluid mechanics.

- GOWING, M. 654
Britain and atomic energy 1939-1945, with an introductory chapter by K. Jay. London, Macmillan; NY, St Martin's P, 1964. xvi,464p, plates, appendixes, index. 55s.

A-C The first volume of the official history of the British atomic project is a most skilful presentation of a complex story of scientific brilliance and administrative difficulties under war conditions. Written by an historian, it includes a very useful chapter of explanation for the layman by a physicist.

- KALLEN, G. 655
Elementary particle physics. Reading (Mass.), London, [etc], Addison-Wesley, ©1964. xiv,546p, tables, diagrs, indexes. \$15.00. *Addison-Wesley series in advanced physics.*

C An introductory text on the theory of elementary particles, written for people with a working knowledge of quantum mechanics and special relativity. Contains very useful material for postgraduate students.

- LEHNERT, B. 656
Dynamics of charged particles. Amsterdam, North-Holland, 1964. x,300p, tables, diags, refs, indexes. 65s; \$9.10.
C Chiefly concerned with the guiding centre approximation for charged particle motion and the associated adiabatic invariants. This theory is applied to magnetic compression, particle confinement, and stability problems: microscopic plasma theory and radiation effects are also mentioned. The detailed derivation of formulae, especially in the Hamiltonian formulation of adiabatic theory is helpful. Recommended to workers in the fields of plasma physics, cosmic ray, and magnetosphere studies.

- MASON, W. P. *ed.* 657
Physical acoustics: principles and methods; vol. I part A, methods and devices. NY, London, Academic P, 1964. xii,515p, plates, tables, diags, index. 128s 6d.
C Excellent text of postgraduate standard dealing with theory of wave propagation in fluids and normal solids in an admirable manner. Other subjects included are waveguide propagation, transducer materials, delay lines and filters, and experimental methods. At the end of each chapter is a very comprehensive list of references.

- SIEGEL, B. M. *ed.* 658
Modern developments in electron microscopy. NY, London, Academic P, 1964. xiii,432p, illus, tables, diags, refs. 96s 6d.
C One paper on the optics of the electron microscope, three papers on selected techniques (production of thin metal films, preparation of specimens, ultra microtomy) and four on selected applications (in physics, histology and cytology, bacteriology and studies on biological macromolecules). Recommended for the research worker who will find in it methods from other fields which may be applicable to his own problems.

54 Chemistry

- BELCHER, R. and WILSON, C. L. *in assoc. with* WEST, T. S. 659
New methods of analytical chemistry. 2nd ed. C & H, 1964. xv,366p, tables, diags, indexes. 60s. [First pub. 1955.]
C This fully revised second edition should prove an invaluable source of reference to recent methods.

- MOSHIER, R. W. 660
Analytical chemistry of niobium and tantalum. Oxford, NY, [etc], Pergamon P, 1964. v,278p, tables, diags, refs, indexes. 90s. *International series of monographs on analytical chemistry*, vol. 16.
C The subject is treated in detail. Classical and modern methods are given for the detection, separation, and identification of these elements, and full procedures are supplemented by over 500 references.

- MUNRO, L. A. 661
Chemistry in engineering. Englewood Cliffs (NJ), Prentice-Hall, ©1964. xii, 460p, illus, plates, tables, diags, appendix, index. 78s.
B This is designed for engineering students (not those specializing in chemical engineering). The approach is less formal than in most chemical courses and emphasis is made on the practical uses to which an engineer puts his materials. Among the subjects covered are conventional and nuclear power, sewage and pollution, electrochemistry, corrosion, automotive chemicals, lubricants, plastics, synthetic rubber, protective coatings, and explosives.

- PHILLIPS, J. P. 662
Spectra-structure correlation. NY, London, Academic P, 1964. ix,172p, tables, diags, indexes. 48s.
C A survey of spectroscopic (absorption) data, from far ultra-violet to near infra-red, for organic compounds; discussion of instrumentation and theory is minimized. Provides a useful aid in identifying compounds from spectra in all regions; the compounds are classified according to functional groups.

548 Crystallography

FRIEDEL, J.

663

Dislocations. Oxford, NY, [etc], Pergamon P, 1964. xxi,491p, plates, tables, diagrs, refs, index. 120s. *International series of monographs on solid state physics*. vol. 3. [Vol. 1, revd vol. 28, 1963, 22.]

C An indispensable reference work. Part I which covers the general properties of dislocations is particularly good and deals clearly and thoroughly with even the most obscure and difficult points. Full account is taken of the direct observations of dislocations by optical, X- and electron microscope methods in recent years, but parts II and III are often too condensed to be readable.

549 Mineralogy

SINKANKAS, J.

664

Mineralogy for amateurs. Line drawings and diagrs by the author. Princeton (NJ), Van Nostrand, ©1964. xii,585p, plates, tables, diagrs, appendixes, index. 97s.

B A very thorough study of the subject for the experienced and knowledgeable amateur. Includes chapters on the atomic aspect, classification, crystal growth, geometry, various properties, formation, and identification. Second part deals with descriptive mineralogy and covers over 250 minerals. Text is supplemented by 136 photographs and 191 line drawings.

55 Geology. Meteorology

GOODY, R. M.

665

Atmospheric radiation. Vol. 1, theoretical basis. Oxford, Clarendon P, 1964. xi,436p, plates, tables, diagrs, bibliogs. 75s. *Oxford monographs on meteorology*.

C An excellent volume presenting the theory of radiative transfer in planetary atmospheres, covering the absorption and scattering of solar and planetary radiation by atmospheric gases and suspended particulate matter. The extensive literature on the subject is critically reviewed for the first time in book form.

66

OCEANOGRAPHY and marine biology: an annual review. Vol. 2. Ed. by H. Barne. A & U, 1964. 548p, tables, diagrs, maps, refs. 75s.

B-C Sixteen papers by competent specialists summarizing recent work on a variety of topics: turbulence, and turbidity currents; beaches, and the mud-water interface; salinity estimation and temperature-salinity effects on animals; radioisotopes in the sea, and bioluminescence in plankton; planktonic nitrogen, and lipids in marine organisms; Canadian arctic oceanography, and Baltic marine zoology; chlorophytes, and echinoderms; behaviour of marine animals, and biological aspects of underwater sound. A valuable review, but covering such a wide field that although some parts will be of wide academic interest, others will be useful mainly to specialists in certain restricted areas of marine research.

57 Anthropological and Biological SciencesDUMBELTON, C. W. *comp. and ed.*

667

Russian-English biological dictionary. O & B, 1964. xiii,512p, 3 gns.

D The author, a translator with the World Health Organization, has compiled this work to fill the obvious need for a Russian-English dictionary in this field. A list of some twenty-five thousand terms drawn from all branches of biology, but intended primarily for translator, as in most cases it is a term-for-term translation with no note on context.

HARRISON, G. A., WEINER, J. S., TANNER, J. M. *and* BARNICOT, N.A.

668

Human biology: an introduction to human evolution, variation and growth. Oxford, Clarendon P, 1964. xvi,536p, illus, plates, tables, diagrs, indexes. 2 gns.

A-B This book is in five sections which have the headings human evolution, human genetics, biological variation in modern populations, human growth and constitution, and human ecology. It is, in the authors' words, an attempt to synthesize the biological organization of past and present human populations.

NASTUK, W. L. *ed.*

669

Physical techniques in biological research; vol. V, electrophysiological methods, part A. NY, London, Academic P, 1964. xv,460p, illus, plates, tables, diagrs, refs, indexes. 114s 6d; \$16.

B-C Excellent practical discussions of advanced electrophysiological techniques cover:

micro- and extracellular-electrode recording and stimulation, microinjection methods, and micro-manipulators. Also some useful material on biological amplifiers with simple accounts of transducers, electrical interference control and recording methods presented at a level useful for physiologists first meeting these problems.

8 Botany

- STON, A. W. 670
 Life of the green plant. 2nd ed. Englewood Cliffs (NJ), Prentice-Hall, ©1964.
 118p, illus, tables, diagrs, index. 12s 6d. *Foundations of modern biology series*.
 First pub. 1961.] Paperback.
 3 Very well illustrated text for the biology student. Aspects dealt with in detail are: structure of the green plant cell, plant nutrition, plant growth, and differentiation and morphogenesis.
 2 Like the other volumes in this series, emphasis is on new instruments, techniques and points of view of the contemporary biologist.

59 Zoology

- VON FRISCH, K. 671
 Ten little housemates. Tr. from the German by M. D. Senft. Oxford, London, [etc], Pergamon P; NY, Macmillan, ©1960, (first English ed., reprinted 1964). 146p, illus, index. 12s 6d. *Commonwealth and international library of science, technology, engineering and liberal studies*. Paperback.
 A An agreeably written and well-illustrated account of ten domestic pests, including flies, fleas, lice, bugs, and moths. In spite of the apparently unsavoury theme, the book is very pleasant reading and recommended for school and public libraries.
 HARRIS, V. A. 672
 Life of the rainbow lizard. Hutchinson, 1964. 174p, illus, plates, tables, diagrs, refs, index. 1 gn. *Hutchinson tropical monographs*. Paperback.
 B-C This monograph on the ecology and life history of the African lizard, *Agama agama*, is a painstaking account of the behaviour of populations occurring in the western region of Nigeria. Much original data is presented and in a form that is capable of being understood and appreciated by the student and professional herpetologist.

- MANN, T. 673
 Biochemistry of semen and of the male reproductive tract. London, Methuen; NY, Wiley, 1964. xxiii, 493p, plates, tables, diagrs, refs, indexes. 5 gns.
 C Distinguished and comprehensive text constituting the second and greatly extended edition of 'Biochemistry of semen' which appeared in 1954. It deals with both the biochemical and biological aspects of the now wider subject. Fully documented and beautifully illustrated.

- MENDELSON, E. 674
 Heat and life: the development of the theory of animal heat. Cambridge (Mass.), Harvard UP, [London, OUP], 1964. x, 208p, index, bibliog. 36s.
 A-B The process of concept formation in the biological sciences is the actual subject of this work. The historical development of a single theory is analyzed in detail, commencing with the concept of 'innate heat' put forward by the Greeks and concluding with an account of the complexity of nineteenth-century European speculation. Modern theory is not studied for valid reasons explained by the author.

6 APPLIED SCIENCES

61 Health and Safety

- EAVES, G. 675
 Principles of radiation protection. General ed. J. F. Hill. Iliffe, ©1964. 10, 185p, plates, tables, diagrs, appendixes, index, bibliog. 2 gns. *Nuclear reactor technology series*.
 A An introduction to the basic principles of the biological and physical aspects of radiation protection given in a non-mathematical manner. Suitable for students wishing to get an initial qualitative appraisal. Chapters dealing with biology are followed by chapters on the interaction of radiation with matter and methods of measurement, the hazards and maximum permissible levels. The more practical aspects of radiation protection such as remote handling and disposal are considered and the legislation affecting the employer in the atomic energy industry is given in detail.

62 Engineering and Technology

674

HIGH TEMPERATURE structures and materials: proceedings of the third symposium on naval structural mechanics, held at Columbia University, NY, January 23-25, 1963. Sponsored by the Office of Naval Research and Columbia University. Ed. by A. M. Freudenthal, B. A. Boley, and H. Liebowitz. Oxford NY, [etc], Pergamon P, 1964. xv,462p, illus, tables, diagrs, refs. 100s. *Office of Naval Research structural mechanics series.*

C Collection of papers (with discussion) reviewing recent research in the field of the mechanical properties of metals and non-metals at high temperatures and the application of results design with particular reference to high speed air and space craft.

ROCKLEY, J. C.

677

Introduction to industrial radiology. Butterworths, 1964. x,237p, illus, tables, diagrs, refs. 55s.

C An excellent book written for the inspection engineer with emphasis on practical techniques, control of the quality of radiographs and interpretation. Useful introductory chapters deal with basic considerations such as principles of radiation physics and the fundamentals of photographic practice. Safety aspects are adequately covered in the concluding chapter.

621 Mechanical and Electrical EngineeringDOBINSON, C. H. *ed.*

678

Uses and effects of nuclear energy. Contributions by Prof. J. Rotblat, Dr P. Lindop, Prof. P. T. Matthews, Dr R. Doll, Dr A. McLaren, Dr R. H. Thomlinson and Prof. A. Salam. Harrap, 1964. 125p, tables, bibliog. 12s 6d.

A Seven lectures to a lay audience at the Institute of Education of the University of Reading. Includes two stimulating and informative chapters on the peaceful uses of atomic energy and nuclear weapons. The remaining five chapters deal clearly with various aspects of radiation. Probably the most authoritative and up-to-date account of this subject for the general reader.

FRANCIS, J. R. D. *and* MINTON, P.

679

Problems in hydraulics and fluid mechanics for engineering students. Arnold, 1964. vii,134p, tables, diagrs, index. 24s.

B A problems-and-answer book for engineering degree students, giving emphasis to the method of solution and practical engineering significance. Useful also to HNC and HND students. Mathematics to calculus standard. First rate in its class.

MORRISON, J. L. M. *and* CROSSLAND, B.

680

Introduction to the mechanics of machines. Longmans, [1964]. vi,461p, illus, plates, tables, diagrs, index. 35s.

B Suitable for courses at undergraduate level. Treats much traditional material well and clearly, and includes mechanical vibrations and an introduction to automatic control. Much better than many older texts in the subject.

681

NEWNES engineer's pocket book of tables, formula and memoranda. 5th ed. Newnes, 1964. xxiii,619p, tables, diagrs, index. 15s. [First pub. 1941.]

D A complete revision of this handy well-known book of engineering tables and formulae with new tables.

621.3 Electrical Engineering

ANDREWS, A.

682

Practice problems in electronics calculations. Foulsham-Sams, ©1964. 208p, tables, diagrs, index. 30s. *Foulsham-Sams electronics series.*

A Gives explicit instructions for performing calculations required for understanding and designing electronic circuits, with numerous worked examples and practice exercises. An invaluable supplement to the numerous more theoretical textbooks available.

- DEAN, K. J. 683
 Transistors: theory and circuitry. NY, London, McGraw-Hill, 1964. xii, 252p, tables, diags, index. 35s.
 B A readable, well presented treatment of the properties and applications of transistor diodes and some other semiconductor devices. Applications considered range from amplifiers and oscillators through D.C. supplies to switching and counting circuits. With so wide a field the treatment, perhaps inevitably, is rather superficial and much information is presented without adequate explanation. Many circuits with component values, several worked examples, and many problems for students are given.
- DOWNING, J. J. 684
 Modulation systems and noise. Englewood Cliffs (NJ), Prentice-Hall, ©1964. xx, 214p, tables, diags, refs, index, bibliog. 66s. *Information theory series*.
 B Elementary introduction to communication systems for undergraduates. Treats the effects of narrow band noise upon sinusoids. Clear introduction to the techniques of modulation and multiplexing of such signals within the framework of elementary signal theory.
- RAPER, A. 685
 Electrical circuits: including machines. Longmans, 1964. xviii, 289p, tables, diags, index. 55s. *Electrical engineering series*.
 B A textbook for undergraduate students. The treatment is theoretical but rightly emphasizes the importance of a good understanding of the physical fundamentals, as expounded in the author's earlier book.
- KEONJIAN, E. ed. 686
 Micropower electronics. Oxford, NY, [etc], Pergamon P, for and on behalf of the Advisory Group for Aeronautical Research and Development, North Atlantic Treaty Organization, 1964. vii, 216p, illus, tables, diags, refs. 4 gns. *Agardograph 77*.
 C A collection of nine lectures on the problem of designing and constructing circuits which operate at very low power levels. Topics range from devices such as metal-oxide semiconductors, field-effect transistors, and multiple emitter transistors, to circuits such as digital integrators and linear amplifiers. Clearly written, up-to-date, and comprehensive.
- PERCE, J. F. 687
 Transistor circuit theory and design. Columbus, Ohio, Merrill, [1964]. xiv, 418p, tables, diags, refs, index. 68s 6d.
 B An excellent book describing the analysis of linear transistor circuits in terms of equivalent circuit and 'black box' representations of the transistor. Many worked examples, showing how engineering approximations can be used to simplify analysis, give the reader a clear understanding of the essential features of circuit behaviour.
- AN VALKENBURG, M. E. 688
 Network analysis. 2nd ed. Englewood Cliffs (NJ), Prentice-Hall, ©1964. xv, 492p, tables, diags, refs, appendixes, index. 68s 6d. *Prentice-Hall series in electrical engineering*.
 B A good book for undergraduates by a well-known worker and teacher in the field of network theory. Both time-domain (transient) and frequency-domain behaviours are treated, and the Laplace transform is introduced at an early stage. Topological analysis (the use of graph theory) is touched on only briefly.

621.7 Workshop Practice

- HILLIPS, A. L. ed. 689
 Welding handbook; section 2, welding processes, gas, arc and resistance. 5th ed. American Welding Soc. (distrib. by Macmillan), 1964. [570] Various paging, plates, tables, diags, index, bibliog. 80s.
 B D A revision of an important section of the most widely used reference book on welding in the world, in which the high reputation is maintained. New material has been added and the contents reorganized to make it up-to-date.

624 Structural Engineering

HURTY, W. C. and RUBINSTEIN, M. F.

69

Dynamics of structures. Englewood Cliffs (NJ), Prentice-Hall, ©1964. xv, 455p, tables, diagrs, refs, index. 96s. *Prentice-Hall international series in engineering of the physical sciences*.

C Deals with analysis of free vibrations and response to harmonic and non-harmonic (including random) disturbances of elastic structures with and without damping. Treatment is modern, comprehensive, and general, with free use of matrix methods and reference to use of digital computers. A very useful textbook and reference for those involved in the field.

LARNACH, W. J.

6f

Influence lines for statically indeterminate plane structures. Macmillan, 196. xi, 256p, plate, tables, diagrs, refs. 90s.

B-C Textbook for final year and postgraduate study. Extensive treatment of influence lines in continuous beams, arches and pin jointed frames, and short chapters on suspension bridges and model methods.

PREECE, B. W. and DAVIES, J. D.

692

Models for structural concrete. CR Books, 1964. 252p, plates, tables, diagrs, refs, bibliog. 55s.

B A valuable text that should be possessed by anyone working in the field. It covers the use of models in engineering education, research, and design and is therefore useful both to students and practising engineers.

629.1 Transport Engineering

MUNRO-SMITH, R.

693

Merchant ship design. Hutchinson, 1964. 272p, plates, tables, diagrs, appendixes, index. 70s.

B A textbook on the practical rather than theoretical aspects of design. Welcome because an up-to-date book by an experienced author had become necessary. Excellent complement to fundamental books on naval architecture.

65 Business Techniques. Management

MILWARD, G. E. and WROE, P. H. S.

694

Office economy by O & M: a preliminary textbook on methods. Foreword by J. E. Wall. London, Macmillan; NY, St Martin's P, 1964. ix, 140p, tables, diagrs, appendixes, index, bibliog. 1 gn.

A An introduction to the simplification of office routines produced by the Organisation and Methods Training Council, designed for beginners in O and M and for junior management. Clear, simple, and useful.

656 Transport

DAVIES, R. E. G.

695

History of the world's airlines. OUP, 1964. xxx, 591p, plates, tables, diagrs, bibliog. 4 gns.

A-B Comprehensive history of the first forty years of world scheduled air transport. Splendidly indexed, illustrated, and generally laid out, this is an authoritative reference work which will also absorb the general reader.

66 Chemical Technology

DODD, A. E.

696

Dictionary of ceramics. Newnes, 1964. v, 327p, tables, diagrs, appendixes. 2 gns.

D Up-to-date dictionary of ceramic terms which fills a gap in the literature. 'Ceramic' is interpreted in its widest sense and includes glass, cement, and vitreous enamelling. References are given in some cases to enable the reader to get further information. Useful to ceramists and those dealing with ceramic materials.

LEVIN, E. M., ROBBINS, C. R. and MCMURDIE, H. F.

697

Phase diagrams for ceramists. Compiled at the National Bureau of Standards, ed. by M. K. Reser. Columbus (Ohio), American Ceramic Society, Inc., 1964. 601p, tables, diagrs, appendixes, indexes. \$18.

D Information contained in previous editions has been brought up-to-date, and approximately one thousand new phase equilibrium diagrams added. The introduction has a useful section on the phase rule, interpretation of phase diagrams, experimental methods, and a selected bibliography. Useful and well produced reference book with clear diagrams.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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